

# CORNELL UNIVERSITY

## OFFICIAL PUBLICATION

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FEBRUARY 24, 1950

### *Summer Session*

ANNOUNCEMENT FOR SESSIONS

JULY 3 - AUGUST 12, 1950



## SUMMER SESSION OFFICE

The Summer Session office is in Room 245, Goldwin Smith Hall; the telephone of the office and the Director is 4-3211, Extension 2924. The office will be open from 8 A.M. to 12 M., and 2 P.M. to 4 P.M. except Saturday during the six-week Summer Session; on Saturday the office will close at 12 noon. Mrs. Ruth Beebe is Secretary, Miss Anita Rynone, Information Assistant.

## ADMINISTRATIVE BOARD

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## CORNELL UNIVERSITY OFFICIAL PUBLICATION

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## *Calendar*

June 12, <i>Monday</i>	Instruction begins, Field School in Geology.
July 3, <i>Monday</i>	Registration for regular six-week Summer Session, 8:30 a.m. to 12:30 p.m. and 1:30 p.m. to 4 p.m., Barton Hall. Fees are due for payment at the Treasurer's office, Administration Building.
July 4, <i>Tuesday</i>	University holiday.
July 5, <i>Wednesday</i>	Instruction begins at time and place announced for each course. Registration is continued at the Summer Session office.
July 8, <i>Saturday</i>	Instruction continues on this Saturday.
July 10, <i>Monday</i>	Last day for payment of fees at the Treasurer's office, which closes at 4 p.m.
July 17, <i>Monday</i>	Instruction begins, Extension Service Summer School.
August 11, <i>Friday</i>	Final examinations begin; schedule on page 23.
August 12, <i>Saturday</i>	Summer Session ends, 4 p.m.

*Be sure to bring this Announcement with you for use on registration day and throughout the Summer Session.*



## *General Information*

THE Administrative Board of the Summer Session offers academic instruction for both graduates and undergraduates by members of the faculties of the Graduate School, of the Colleges of Arts and Sciences, Engineering, Agriculture, and Home Economics, of the Schools of Education and Industrial and Labor Relations, and of the Department of Hotel Administration.

This unification of the curricula and faculties of the several schools and colleges makes possible the adaptation of academic work to the special needs of summer students. Undergraduate courses are equivalent to required and elective collegiate courses leading to the baccalaureate. Advanced courses, seminars, and informal study, treating topics of concern to students with special interests, are designed with particular regard for what can satisfactorily be treated in a short term and in the summertime. The needs of teachers are met not only in the workshops, seminars, and professional courses in Education, but also in departmental courses. A number of unit programs and special courses are offered for professional workers other than teachers.

All the necessary facilities of the University are available to students registered in the Summer Session: libraries, classrooms, and laboratories; residence halls, dining rooms, and cafeterias; health and infirmary services; student union, chapel, playing fields, and recreational areas.

### ADMISSION

The Summer Session's purpose is to place the facilities of the University at the disposal of persons who can use them to good advantage and for serious purposes during the summer period. Admission will not be granted to persons who are inadequately trained for the work they propose, or whose records in Cornell University or elsewhere are unsatisfactory. Nor will admission be granted to persons whose purposes seem inadequate or inappropriate or better served by other work at other institutions.

Admission of undergraduate or graduate students to the Summer Session establishes no priority with respect to admission to the regular terms. Students seeking admission to an undergraduate college in the fall should apply to the Director of Admissions, 231 Administration Building.

Students are eligible for admission to the Summer Session in three categories as follows:

*UNDERGRADUATES*... Undergraduate candidates for the Bachelor's degree, at Cornell University or elsewhere, are required to pre-register for a program of courses totaling between five and seven credit hours, all of which are approved by the dean, registrar, or other officer of their college for credit toward graduation. This preregistration, to be made by completing the undergraduate application form, is final and can be changed only by filing a new application. The special application form for undergraduates will be mailed by the Director on request.

Junior standing or above is required of undergraduates regularly attending institutions other than Cornell University. By definition a student has achieved junior standing if he has completed half the credit requirements for the Bachelor's degree before July 1, 1950. Cornell undergraduate women who have not completed a fourth term of residence must demonstrate that their program of study requires summer attendance.

June 1, 1950, is the closing date for admission of undergraduates.

*GRADUATES*... Any graduate of a recognized four-year college or normal school is eligible for admission to the Summer Session upon receipt by the Director of a graduate application form. On this form the applicant is asked to list his program of study. This selection of courses is designed to ensure a place in classes for the student but does not excuse him from registration in Barton Hall on July 3; he may at that time change his selection if he finds classes to which he can be admitted. Admission to the Summer Session in this category does not constitute admission to the Graduate School of Cornell University as a candidate for an advanced degree. See page 11 for information regarding admission to the Graduate School.

*SPECIAL STUDENTS*... Applicants over twenty-four years of age who are not candidates for an academic degree will be admitted to the Summer Session for courses which will help their vocational and personal development.

*APPLICATION FOR ADMISSION*... Application for admission to the Summer Session 1950 must be made on a special form mailed by the Director of the Summer Session on request. In most cases the information called for on this form will be sufficient.

Registration coupons, necessary for registration in the Summer Session, will be mailed to the applicant after favorable action.

## PROGRAM OF STUDY

The normal Summer Session program is six semester hours, which constitutes a full load in the six-week session. Students are advised against registering for more.

Undergraduates are required to register for a program of between five and seven hours' credit. The permission of the Director of the Summer Session is required for programs totaling less than this, and the written permission of the student's dean is necessary for programs as heavy as eight credit hours, the maximum load. Permission for an eight-hour program is usually granted only to those students with a high academic average.

Graduates and special students not enrolled in the Graduate School of Cornell University are required to register for at least four semester hours of credit and may not register for more than seven hours of credit except by permission of the Director.

Graduate students matriculated in the Graduate School of Cornell University may, upon the recommendation of their respective committee chairmen, register for as many as eight hours of credit.

Special permission for registration in certain restricted courses, as noted in the following course descriptions, should be obtained, before filing the application blank, by writing to the instructor named.

## ACADEMIC CREDIT

All courses offered in the Summer Session are assigned appropriate semester hours of credit. Registration for a program of courses implies registration *for credit*. The designation, "registration for attendance," has been discontinued. A student wishing to attend regularly a class for which he is not registered should obtain an auditor's permit (see page 8).

*GRADUATE CREDIT* . . . There is, in general, no sharp distinction between undergraduate and graduate courses. In this Announcement each course is marked immediately after the title in one of three ways:

(U). . . These courses are intended primarily for undergraduates. Students registered in the Graduate School of Cornell University will not receive credit for these courses toward an advanced degree unless such credit is specifically recommended by the committees in charge of their work.

(U,G). . . These courses are offered both at the graduate and the undergraduate level. Graduate students who are candidates for advanced degrees or who wish certification for work done at the graduate level must indicate at the time of registration their intention to com-

plete the course at the graduate level and must be prepared to do any additional work that may be required. Such students registered in "U,G" courses should get in touch with their instructors early in the session to see that the level is properly recorded.

(G)... These courses are intended primarily for students who are candidates for advanced degrees, for teachers, and for others who wish certification to accrediting agencies for work done at the graduate level. Undergraduates with adequate preparation may register for these courses only after receiving permission from the instructors in charge.

*CREDIT TOWARD DEGREES AT CORNELL UNIVERSITY...* Students matriculated in an undergraduate school or college of Cornell University will be admitted to the Summer Session only after the appropriate officer from the following list has approved and signed his application for admission.

College of Agriculture: Professor J. P. Hertel

College of Architecture: Secretary R. P. Lang

College of Arts and Sciences: Associate Dean M. L. Hulse

College of Home Economics: The student's counselor

College of Engineering:

Chemical: Professor C. C. Winding

Civil: Professor N. A. Christensen

Electrical: Professor J. G. Tarboux

Mechanical: Professor G. R. Hanselman

School of Industrial and Labor Relations: Professor C. A. Hanson

This approval will indicate that the school or college will accept credit in the stipulated courses as credit toward a degree.

No student may receive credit for more than eight semester hours of work done in a single six-week summer session.

*CREDIT IN INSTITUTIONS OTHER THAN CORNELL UNIVERSITY...* An undergraduate enrolled in another institution, before admission to the Summer Session, will submit as part of his application a program of courses approved for credit by an officer of the institution in which he is a candidate for a degree. When admitted, the student will be preregistered for those approved courses. At the end of the Session an official transcript of the Summer Session record will be sent to the institution. The transcript will show what courses have been taken, the amount of credit in semester hours, and the grades received.

*GRADES...* All grades are reported in a numerical scale from 0 to 100. If a student *for medical or other important reasons* must be absent from the last class meeting and cannot make up the work before the last day of instruction, he may request the instructor to report his grade as

*Absent*, together with a conditional numerical grade which may be used as the final recorded mark if the course work is not completed by January 1, 1951. It is the student's responsibility to make such specific arrangements with his instructors when necessary.

No other grades, for instance, *Incomplete*, are given in the Summer Session.

The colleges of Cornell University regard the grade of 60 as the lowest passing grade.

## REGISTRATION

Registration for the six-week Summer Session will take place Monday, July 3, in Barton Hall. Each student's certificate of admission will give the hour of the day at which he will be admitted. Directions for registration procedure will be issued at the entrance. Students who for any reason have not received a certificate of admission will report to the Admissions table at Barton Hall after 9 a.m.

Graduate students who are candidates for degrees at institutions other than Cornell University, and who are planning to obtain credit toward these degrees by their Summer Session work, do *not* register in the Cornell Graduate School, but only in the six-week Summer Session. Before so registering they should arrange for the accrediting of this work by the institutions from which they plan to take their degrees. Other students who hold Bachelor's degrees, but who are not candidates for advanced degrees, will also register only in the six-week Summer Session.

Registration in the University is required for admission to any of the exercises of the Summer Session.

**UNIT COURSES.** . . . In the curriculum below, a number of courses are announced which are less than six weeks in duration. Usually such courses are designed to occupy the full time of the student. It is therefore impossible for students registered in the six-week session to register for a unit course, or for a student in a unit course to enroll in other courses. The special times and places for registration in unit courses are announced in the course descriptions.

**CHANGES OF REGISTRATION.** . . . All changes of registration after Monday, July 3, must be made by appearing at the Summer Session office, 245 Goldwin Smith Hall, before 4 p.m. on July 7. When a change of registration involves enrollment in another course, the permission of the instructor of the new course is necessary.

An undergraduate whose program requires change on registration day should report to the Director and must have obtained approval of the change from an officer of the institution in which he is a degree candidate.

Changes in registration include cancellation of a course, change from one course to another, change in graduate or undergraduate level, or addition of a course to a program.

Changes in registration cannot be effected by notifying the instructor of a given course. Students must appear at the Summer Session office before 4 p.m. on July 7 in order to make program changes.

*AUDITORS.* . . Admission to classrooms during the Summer Session is restricted to students registered for the Session. A student thus duly registered may occasionally visit any class; but if he wishes to attend regularly classes for which he is not registered, he must secure an auditor's permit. Such permits will be granted whenever the student can show a serious purpose in such attendance, if his program is light enough to allow the additional appointment. Auditors do not take part in the work of the courses which they visit, and no record of such attendance is made. Auditors' permits are not issued on registration day; they may be secured on Thursday, July 6, and later at the Summer Session office.

*WITHDRAWAL FROM THE SUMMER SESSION.* . . See page 9 for information concerning withdrawal.

## FEES

All fees are due and payable at the Treasurer's office in the Administration Building on registration day, July 3. The last day for payment of fees without penalty is Monday, July 10.

*TUITION.* . . The tuition fee for the six-week Summer Session is \$80. This fee includes a \$3 Willard Straight Hall (student union) fee and a \$5 administration fee. Students who claim free tuition must pay these two fees separately. Tuition for unit courses is charged at the rate of \$15 per week, which charge includes a pro rata share of the student union and administration fees.

*FEES AND DEPOSITS.* . . Six-week Summer Session students will pay a health service and infirmary fee of \$5 in addition to tuition. The services for this fee are described on page 14.

Laboratory, shop, field-trip, and incidental fees and deposits are also charged for materials and other expenses in certain courses. The amounts of these fees are specified in the course descriptions, and the courses requiring special fees and deposits are marked by a dagger prefixed to the course number.

Special fees are charged for individual instruction in music, golf, tennis, and other subjects.

**REGISTRATION DEPOSIT.** . . . A student who is registering as a candidate for a degree for the first time in the Graduate School or in one of the other schools or colleges of Cornell University must pay a registration deposit of \$30, unless he has already paid this deposit as an undergraduate at Cornell University. A student registered only in the six-week Summer Session *does not pay* this deposit.

A matriculation fee of \$18 is charged against this \$30 deposit upon registration, and the balance becomes a guaranty fund refunded upon graduation or permanent withdrawal. For further information about this deposit, the *General Information* booklet, which may be obtained upon request from Cornell University Official Publication, Administration Building, should be consulted.

**WITHDRAWAL FROM THE SUMMER SESSION.** . . . A student may arrange for withdrawal at any time by canceling his registration *at the Summer Session office*, 245 Goldwin Smith Hall. In such cases, the Treasurer may refund a part of the tuition and health and infirmary fee, or cancel a part of the obligation that the student has incurred for tuition, provided the reason for withdrawal is stated in writing and is satisfactory to the Treasurer and the Registrar. In such cases the student is required to pay 20 per cent of the term's tuition and health and infirmary fee for each week or fraction of a week between the first registration day and the date of his certificate of withdrawal, unless the withdrawal is made before noon on Saturday, July 8. No refund of the health and infirmary fee will be made for a student who has been admitted to the Infirmary.

**OTHER REGULATIONS CONCERNING FEES.** . . . Any student, graduate or undergraduate, except as hereinafter provided, who fails to pay his tuition, fees, and other indebtedness, or, if entitled to free tuition fails to claim the same at the Treasurer's office and pay his fees within the time prescribed by the University, is thereby dropped from the University. When in his judgment the circumstances in a particular case so warrant, the Treasurer may allow an extension of time to complete payments. For such an extension, the student will be assessed a fee of \$2. A reinstatement fee of \$5 will be assessed in the case of any student who is permitted to continue or return to classes after being dropped from the University for default in payments. For reasons satisfactory to the Treasurer and the Registrar, which must be presented in writing, the above assessment may be waived in any individual case.

Any tuition fee or other fee may be changed by the Trustees to take effect at any time without previous notice.

**CASHING OF CHECKS.** . . . The Treasurer of the University accepts



checks in settlement of charges payable at his office, but a rule of the Board of Trustees forbids him to cash any credit instrument, even to the extent of accepting a check or draft in amount greater than the sum due and returning the excess in cash. Students are therefore advised to open an account in an Ithaca bank as soon as they arrive in town, or else to provide themselves with travelers' checks, drafts on New York City banks, money orders, or other forms of credit instrument such as a bank will cash in the ordinary course of business.

## VETERANS

Veterans who wish to study under Veterans Administration educational benefits for the Summer Session should observe the following instructions.

**PUBLIC LAW 346 VETERANS.**...A veteran enrolling for the first time under educational benefits should bring with him V. A. Form 7-1953, Certificate of Eligibility. If he does not have such a certificate at the time of enrollment, he should bring full-size photostatic copies of his Discharge or Qualification Record. If married he should bring a copy of his marriage certificate from the County Clerk or the Bureau of Vital Statistics. A church certificate, unless it bears the church seal, must be notarized. A birth certificate, showing names of father and mother, must be submitted for a dependent child. If a dependent parent is claimed, the student should bring a notarized affidavit of dependency, V. A. Form 8-509, and a copy of his own birth certificate.

If the student has been in training under educational benefits at some other school, he should bring a Supplemental Certificate of Eligibility, V. A. Form 7-1953. If he should apply for a Supplemental Certificate after arrival at Cornell, he must present V. A. Form 7-1905e, properly endorsed by the institution where he was previously enrolled under educational benefits. The veteran should notify his present Veterans Administration Regional Office in advance to transfer his folder to the Veterans Administration Regional Office at Syracuse, New York.

Veterans in the classifications above who do not present Certificates of Eligibility *on registration day* will be expected to pay for tuition and fees, subject to such reimbursement as may become due. The Veterans Administration will pay training benefits only from the day a request for a Certificate is received in the Regional Office.

**PUBLIC LAW 16 VETERANS.**...If a veteran has been approved, or has applied for approval under Public Law 16 (Rehabilitation), he should request his present Veterans Administration Regional Office to send his rehabilitation folder in advance to the Veterans Administration Regional Office at Syracuse, New York, with a letter explaining



that he is entering training at Cornell. If the student has not yet been approved for Public Law 16 benefits, he should follow *all* of the above instructions for Public Law 346 veterans.

## THE GRADUATE SCHOOL

The Graduate School is an administrative unit entirely separate from the administration of the Summer Session. Only candidates for advanced degrees at Cornell University are registered in the Graduate School in the summertime. Students who take course work at the graduate level in the Summer Session, but who are not candidates for an advanced degree at Cornell University, have no connection with the Graduate School.

*CREDIT FOR ADVANCED DEGREES*...Summer Session credits may be used for fulfillment of requirements for the following advanced degrees, under regulations of the Faculty of the Graduate School:

Master of Arts (A.M.)

Master of Science (M.S.)

Master of Science in Agriculture (M.S. in Agr.)

Master of Science in Education (M.S. in Ed.)

Master of Education (M.Ed.)

Master of Science in Industrial and Labor Relations (M.S. in I.L.R.)

Master of Chemical Engineering (M.Chem.E.)

Master of Metallurgical Engineering (M.Met.E.)

Master of Electrical Engineering (M.E.E.)

Master of Civil Engineering (M.C.E.)

Doctor of Education (Ed.D.)

Doctor of Philosophy (Ph.D.)

In the main, not more than one Summer Session, consisting of a full program of courses at graduate level, taken before a student has been admitted to candidacy for an advanced degree, may be transferred to the Graduate School in fulfillment of degree requirements.

After admission to the Graduate School a candidate may, on recommendation of his graduate committee, complete one year of the residence requirements for the degree by Summer Session study, including the one Summer Session allowed before admission to candidacy. Five Summer Sessions equal one year or two semesters: three Summer Sessions equal the first semester and two Summer Sessions equal the second semester. A candidate who is in residence only during Summer Sessions is expected to continue his studies during the year under the direction of the chairman of his committee.

*ADMISSION*...Students intending to become candidates for an advanced degree at Cornell should write to the Dean of the Graduate

School, 125 Administration Building, for application blanks and for the *Announcement of the Graduate School*, which gives all regulations governing advanced degrees, including regulations governing admission. Applications received before May 1 will be acted upon in time for the accepted candidate to register in the Graduate School on registration day, July 3. Those who apply after May 1 probably will not be admitted to the Graduate School for the ensuing summer but may take graduate courses in the Summer Session; this work may be transferred to candidacy later, providing it does not exceed the one Summer Session stipulated above and is approved by the candidate's special committee.

**REGISTRATION DEPOSIT.** . . . On admission to the Graduate School, the applicant is required to pay the sum of \$30 within twenty days of notification of admission. Eighteen dollars will be used to pay the matriculation fee; the other twelve dollars will be held on deposit in the Treasurer's office until official withdrawal or the granting of the degree, as a guaranty against outstanding bills.

**REGISTRATION.** . . . Matriculated students must register in both the Summer Session and the Graduate School. Full information and proper forms for registering in the Graduate School are to be obtained at the Graduate School table in Barton Hall on registration day. The registration must be completed within one week of registration day. To register, each candidate must file a Statement of Courses blank, properly approved by his committee chairman. Each *new* candidate must file a Nomination of Committee blank.

*Note:* Such registration is regarded in the same fashion as registration for a regular semester and affects the deadlines for fulfillment of requirements. For instance, a new candidate must complete his first language requirement within thirty days of Summer Session registration day.

**COMPLETION OF REQUIREMENTS.** . . . Candidates for advanced degrees who expect to complete requirements and to take their final examinations at the end of the Summer Session should call at the office of the Graduate School not later than the third week of the Session for the necessary instructions and blanks.

**CANDIDATES IN THE SCHOOL OF EDUCATION.** . . . Students interested in the degrees of Master of Science in Education (M.S. in Ed.) and Master of Education (M.Ed.) should consult the *Announcement of the School of Education*, which will be sent upon request to Official Publication, Administration Building, Cornell University. The Faculty of the School of Education, functioning as a division of the Faculty of the Graduate School, has special jurisdiction over those two degrees.

## SPECIAL REGULATIONS

*CONDUCT AND SCHOLARSHIP* . . . The Summer Session is administered under the general regulations governing conduct and scholarship which apply to all sessions of the University. Students are expected to familiarize themselves with dormitory and other rules and to abide by them. A statement of the University rule governing student conduct follows:

"A student is expected to show both within and without the University unfailing respect for order, morality, personal honor, and the rights of others. The authority to administer this rule and to impose penalties for its violation is vested in the University Committee on Student Conduct. The rule is construed as applicable at all times, in all places, to all students of the University."

*AUTOMOBILE REGULATIONS* . . . Because of local traffic and parking conditions it is necessary to require registration of both motor vehicles and their drivers during the Summer Session as well as during the academic year. Each student who maintains or operates a motor-driven vehicle in or about Ithaca during the Summer Session must do the following: (1) register with the Safety Division Office, Administration Building, at the time of Summer Session registration, by paying a fee of \$1 and displaying, as directed, a registration sticker; (2) if under twenty-one years of age, have written consent of his parent or guardian; (3) produce evidence that he may drive in New York State and that the vehicle may be driven there; (4) produce evidence that the vehicle is insured at the standard minima of \$5,000-\$10,000-\$1,000. Motorcycles may be registered but may not be used on the campus during class hours. Trailers as family living units are not allowed on any University property. Campus parking during class hours may be restricted to certain areas.

## LIBRARIES

The University libraries comprise the General Library of the University and the libraries of the following colleges and schools: The Library of the College of Agriculture, the Library of the Agricultural Experiment Station at Geneva, the Architecture Library, the Business and Public Administration Library, the Engineering Library, the Library of the College of Home Economics, the Library of the School of Industrial and Labor Relations, the Law Library, and the Veterinary Library.

In addition there are the following special departmental libraries and laboratory collections: Agricultural Economics, Agronomy, Animal Husbandry, Barnes Hall, Botany, Browsing, Chemical Engineering,

Chemistry, Conservation, Dairy Industry, Entomology, Floriculture, Geology, Goldwin Smith, Mathematics, Military, Music, Nutrition, Physics, Plant Breeding, Plant Pathology, Poultry, Regional History, and Zoology.

The usual hours of opening for the libraries during the Summer Session are 7:50 a.m. to 10 p.m. on all weekdays except Saturday, when the libraries close at 5 p.m. Certain exceptions, especially in the departmental libraries and laboratory collections, may prevail.

The general collection of reference books and documents, the chief bibliographical publications, and the principal series of academy and learned society publications are located in the University Library. Specialized reference materials will be found in the various college and departmental libraries. The Reference Department of the University Library and the librarians of the college, school, and departmental libraries are prepared to assist students in the effective use of the libraries and in the location of research materials.

The total library resources on the Ithaca campus exceed 1,350,000 volumes. The number of periodicals, transactions, and other serials currently received is over 5,000.

In the course of their development the libraries have received and have built up special collections, some of the most significant being: Architecture, American History, Slavery, Reformation, English and French Revolutions, American Civil War, History of Superstition, Spinoza, Dante, Petrarch, Rhaeto-Romanic, Egyptology and Assyriology, China, Dramatic Literature, Freemasonry, Legal Trials, Entomology, Botany, Zoology, History of Science, Icelandic, and Regional History.

Cards of admission to the stacks and to the White Historical Library are issued to graduate students for the purpose of consultation and research. A limited number of stalls and study spaces are available to graduate students upon application. The privilege of borrowing books for home use is granted to all students who comply with the library regulations.

## HEALTH SERVICE

The Student Medical Clinic at 5 Central Avenue will be available for all registered Summer Session students.

### Clinic Hours

Monday through Friday	9-12 a.m. 2-4:30 p.m.
Saturday	9-12 a.m.
Sunday	10-11 a.m.

A nurse will be in attendance from 12 noon until 2 p.m. Monday through Friday. Those desiring to consult a physician after 5 p.m.

weekdays, on Saturday afternoons, or on Sunday for an illness or accident of emergency nature may go directly to the institution providing hospital services. The night service is not intended for the use of those who could visit the Clinic during the day.

Emergency room call service will be available at these charges: \$3 for night visits and \$2 for day visits. Requests for room visits will be cleared through the Student Medical Clinic, Ithaca 4-3211, Extension 4518, during the day, and through the Infirmary switchboard, Ithaca 2747, after 5 p.m. on weekdays, Saturday afternoons, and Sundays. Patients requiring more than one emergency visit for any one illness will not be treated in their rooms but will be requested to go to the institution providing hospital services.

Hospital care will be provided for students either at the Cornell Infirmary or the Tompkins County Memorial Hospital. The specific place will be made known to students on the opening day of the Summer Session. Two days' bed, nursing, and ordinary medical care will be granted without extra charge. Emergency surgical care will also be provided. Emergency surgical care is defined as surgical procedures which, in the opinion of the Medical Director, are necessary for the immediate welfare of the patient. Rates in a hospital for registered students beyond the two-day exemption period will be \$5 a day.

If a student, while in the hospital, wishes to avail himself of a private physician from the visiting staff, he is at liberty to do so. A student may also receive medical care from private physicians in the city of Ithaca rather than consult the Clinic. In either case, the cost of this service is not included in the health fee.

## LIVING ACCOMMODATIONS

Rooms are available to both graduate and undergraduate men and women in University-operated housing units, as well as off campus. A leaflet giving detailed information on both types of housing, *Residential Halls for Men and Women*, may be secured by writing to the Department of Residential Halls, Administration Building, Cornell University, Ithaca, New York.

**UNDERGRADUATE WOMEN.** . . All undergraduate women, and all other women under twenty-one years of age, registered in the 1950 Summer Session, are required to live in Residential Halls for Women and to take their meals there. Clara Dickson Hall will be in use for such housing, and there will be a uniform charge of \$144 for board, room, and an allowance of personal laundry for the six-week period.

**GRADUATE WOMEN.** . . Cascadilla Hall and the University Cottages (One, Two, Three, and Five The Circle, and 302 Wait Avenue)

will be reserved for graduate women's housing. The rates will range from \$39 to \$57 for the six-week session, depending upon the desirability and location of the room, and will include room and an allowance of personal laundry only.

In addition, a section of Clara Dickson Hall, the undergraduate dormitory, will be available for graduate women who are interested in arranging for board. The uniform charge of \$144 for six weeks includes room, twenty-one meals a week, and an allowance of personal laundry. Undergraduate regulations will be observed.

*DORMITORY REGULATIONS FOR WOMEN.* . . Both undergraduate and graduate dormitories are open at 7 a.m. daily; undergraduate dormitories close at 11:30 p.m. Sunday through Thursday, and at 12:30 a.m. Friday and Saturday; graduate dormitories close at 12 midnight Sunday through Thursday, and at 1 a.m. Friday and Saturday.

It is understood that persons living in Residential Halls will conform to the house regulations made for the convenience and comfort of all students.

*HEAD RESIDENTS.* . . The Head Residents in charge of the Residential Halls for Women are glad to know the students, to give them whatever information they wish about the University or the town, and to advise them in cases of illness or emergency.

*GRADUATE AND UNDERGRADUATE MEN.* . . Rooms in Residential Halls for Men will be available upon application. Rooms are reserved in order of date of application. The cost of rooms ranges from \$4.25 to \$6 a week, depending upon the desirability and location of the room.

*OPENING-CLOSING DATES OF DORMITORIES.* . . All Residential Halls and Cottages for men and women will be open for occupancy Sunday, July 2, at 8 a.m.; they will close at 2 p.m., Sunday, August 13. *Earlier or later occupancy will not be possible under any circumstances.*

*APPLICATION FOR ROOMS.* . . Applications for rooms in Residential Halls cannot be given consideration unless they are mailed on regular application forms to the Office of Residential Halls. Room application forms are distributed *only* by the office of the Summer Session *after* admission has been approved, and each student will automatically receive one with his certificate of admission to the Summer Session.

Applications for rooms should state the exact dates of proposed attendance at the University.

Women students registering for classes in dramatic production and for courses in ornithology should so indicate when making room application.

*DEPOSITS WITH APPLICATIONS.*...A deposit of \$5 must accompany each application for a room in any of the Residential Halls if the application is to receive consideration. This deposit is not applied on the residence charge. If the student occupies an assigned room for even a limited amount of time, the deposit is held until after the end of the Session to cover the return of keys and any damage to building or furniture other than that occasioned by normal use and to ensure completion of the lease. Deposit refunds are made between September 10 and 20 and are mailed to the home address unless otherwise requested by the student.

The \$5 deposit check, or money order, should be drawn to the order of Cornell University.

*REFUND OF DEPOSITS AFTER WITHDRAWAL OF ROOM APPLICATIONS.*...Intention to withdraw an application for a room, or intention not to occupy the assigned space, must be made in writing to the Manager of Residential Halls. The \$5 room deposit will be refunded before the end of the Summer Session if such written notice of withdrawal is made on or before June 15 (or within two weeks for applications received later than June 2).

*OFF-CAMPUS HOUSING.*...The Off-Campus Housing Office in the Administration Building is maintained by the Department of Residential Halls. This office is a bureau of information only, maintaining files of voluntarily listed accommodations for the use of students who call at the office. Such lists cannot be mailed to prospective students.

Students desirous of subletting houses or apartments off campus are advised to arrive in Ithaca in advance of registration in order to secure such quarters. Rentals of sublet houses and apartments for the Summer Session range from \$50 to \$100 per month.

There is normally an adequate supply of rooms available in off-campus locations for the Summer Session. These rooms vary considerably in comfort, convenience, and safety. Before leasing a room, careful consideration should be given such details as distance from campus, nearness to eating places, price, ventilation, sanitation, furnishings, and fire escapes. Arrival in Ithaca a few days in advance of registration day will assure students of a better selection of off-campus rooms. It is expected that in 1950 rentals will range from \$5 to \$10 weekly.

*DINING ROOMS AND CAFETERIAS.*...The dining facilities of Willard Straight Hall and the cafeteria in Martha Van Rensselaer Hall are open to both men and women students. Board may be obtained at these places, or at cafeterias, dining rooms, and restaurants near the campus, at approximately \$1.75 to \$2.25 a day.



*COST OF LIVING*... An estimate of the cost of living in Ithaca in the summer can be made by consulting the figures given in the preceding paragraphs. In private houses rentals vary according to the location. Rooms are rented with the understanding that they will be occupied for the entire Session unless both parties agree otherwise.

## COUNSELING SERVICES

The office of the Dean of Men and Dean of Women is located on the first floor of the Administration Building. This office maintains the following services.

*PART-TIME EMPLOYMENT*... Student employment opportunities during the Summer Session are limited, due to the shortness of the session and the fact that offices and other services can run with smaller staffs. This office lists any part-time jobs which are available, and those students interested in working should register their needs. The office will refer qualified students to prospective employers.

*INDIVIDUAL COUNSELING*... There is a trained guidance and counseling staff for all students who feel a need for social, personal, educational, or vocational counseling.

*TESTING*... In co-operation with the University Testing Service, appropriate tests will be administered if, in the counseling process, need for aptitude or interest testing is indicated.

*VOCATIONAL INFORMATION*... A vocational information library is maintained.

*COUNSELING FOR FOREIGN STUDENTS*... The University has on its staff a Counselor to Foreign Students whose duty it is to look after the welfare of all students from other countries. It is suggested that all foreign students write to him before coming to Ithaca, or call upon him soon after arrival. He will help them find suitable living quarters and assist them with introductions. Letters should be addressed to: Counselor to Foreign Students, Administration Building, Cornell University, Ithaca, New York.

## PROGRAM OF EXTRACURRICULAR ACTIVITIES

The Summer Session, in co-operation with departments and agencies of the University, arranges a balanced extracurricular program of public events and recreation designed to enrich the campus experience of its students, especially those who are not at the University during the winter months.



*THE WEEKLY CALENDAR AND ANNOUNCEMENTS.* . . . A weekly calendar and announcement, issued and posted on each Saturday of the Summer Session, contains not only all official notices but details of public events and also interesting news about special activities on the campus. Copies may be obtained without charge at the desk in Willard Straight Hall, at the Summer Session office, and at other University offices. Students are advised to secure copies regularly.

*LECTURES.* . . . Public lectures, open to all Summer Session students, are given on selected Wednesday evenings of the Session. Both non-resident lecturers and members of the Faculty take part in the series, and the subjects are chosen for their general interest and timeliness. In 1949 the lecturers and their topics were:

Dr. Alvin C. Eurich, President of the State University of New York, "Higher Education in New York State."

Dr. Carl W. Gartlein, Curator in Physics, Cornell University, "The Aurora Borealis and Practical Affairs."

Dr. Andreas Dorpalen, Professor of History, St. Lawrence University, "Germany between East and West."

John Fletcher-Cooke, Counsellor at the British Delegation of the United Nations, "The United Nations and the Colonial Problem."

Karl Shapiro, member of the Department of Writing, Johns Hopkins University, "The Poet in the Theatre."

*Afternoon series.* In the late afternoon and on Monday evenings at times to be announced, lectures, primarily by nonresident lecturers but occasionally by members of the University Faculty, are open to all Summer Session students. These lectures, though usually nontechnical, are designed to treat more restricted subjects than are those of the evening series.

*READING HOURS.* . . . On Sunday evenings, in the Browsing Library at Willard Straight Hall, members of the faculty read aloud passages of literature of their own selection.

*SAGE CHAPEL.* . . . Religious services are conducted in Sage Chapel throughout the academic year by clergymen of various religious denominations. There will be services in the Chapel on five Sundays during the Summer Session, July 9 to August 6, inclusive.

*CONCERTS.* . . . A series of Thursday evening concerts is given in the Memorial Room of Willard Straight Hall, open without charge to students in the Summer Session.

*RECORDED MUSIC.* . . . On Sunday afternoons recorded music is broadcast on the Library Slope. If the weather is inclement it is broadcast in the Memorial Room, Willard Straight Hall. Recitals of recorded

music are arranged for each Wednesday and Saturday evening in the Music Room, Willard Straight Hall.

*RECREATIONAL, FOLK, AND SQUARE DANCING*... For students and Faculty members on Monday evenings. An instructor is present.

*SUMMER THEATRE*... Performances are given by the Summer Players on Friday and Saturday evenings in the University Theatre, Willard Straight Hall. Admission is charged. In 1949 the series included: "The Ascent of F6," by Auden and Isherwood; "Mr. Pim Passes By," by A. A. Milne; four one-act plays; and "The Vinegar Tree," by Paul Osborn.

The Summer Session productions of the Theatre are under the general direction of Professors Albright, Drummond, and Stainton, assisted by other members of the direction staff. Regularly enrolled members of the classes in Speech and Drama may compete for places in the casts and production staffs. Detailed announcements will be made in the various classes.

*FILMS*... Noteworthy European and American films are presented weekly by the University Theatre during the Summer Session. Admission is charged. In 1949 the following films were shown: "The Ghost Goes West," "Volpone," "This Happy Breed," "Farrebique," "Henry V," and "Dreams That Money Can Buy."

*WILLARD STRAIGHT HALL*... The student union of Cornell University contains lounges for men and women, rooms for student meetings, for games, and for dancing, the University Theatre where motion pictures and dramatic productions are given each week, a billiards and games room, a barber shop for men, a browsing library well stocked with books of general interest, and a music and art room. On the upper floors of the Hall are sleeping rooms used principally by parents and guests of students, by alumni, and by guests of the University.

The Board of Managers of Willard Straight Hall not only co-operates in some of the events listed above, but also arranges for dances, open houses, teas, games, art exhibits, and other recreation and entertainment.

Willard Straight Hall is for the use of members of the University; but guests of members may secure guest cards for limited periods upon application to the Director of the Hall.

*SPORTS*... Tennis courts, conveniently located about the campus, are available for the use of Summer Session students, and a nine-hole golf course is operated by the University. A gorge at one end of Beebe Lake,

on the campus, forms a natural swimming pool, where two guards are on duty every day of the Session from 1 to 6 p.m.

Private lessons in tennis, golf, and swimming are offered by members of the Department of Physical Education.

*Tennis.* Hours to be arranged upon registration at Barton Hall on July 3. Eight lessons and two lectures. Fee, \$12.

*Golf.* Hours to be arranged. Call Mr. Hall at the University Golf Course, Ext. 4411.

*Swimming.* Hours to be arranged. See Mr. Staley at Beebe Lake or call Ithaca 41194.

For more detailed information, address Mr. R. J. Kane, Director of Athletics, Schoellkopf Building.

An extracurricular course in equitation is also offered. Address inquiries about fees and hours to the Director of the Equitation Course—Summer Session, Barton Hall.

# *The Curriculum*

*COURSES OF INSTRUCTION*...The listing is by departmental subheadings under general fields of instruction. For offerings in particular subjects, consult the Index. Because of demands which may be placed upon the instructing staff, it may be necessary to substitute instructors for the ones named in the course descriptions. The Director reserves the right to cancel any course for which, through unforeseen circumstances, satisfactory instruction or facilities cannot be provided.

*UNIT COURSES*...Unit courses, less than six weeks in length, are indicated by asterisks, and their dates are given in the descriptions.

*COURSES WITH FEES ATTACHED*...Courses requiring laboratory or other fees are marked by daggers.

*CLASS SCHEDULES*...In most courses of instruction, classes will meet five times a week, on each weekday except Saturday. All classes scheduled for Tuesday will meet at the same hour on Saturday, July 8, to make up for loss of class meetings in the first week. In case of conflict with a scheduled Saturday class, notify the office of the Summer Session. Class periods begin on the hour, unless otherwise indicated, and are fifty minutes in length. Laboratory periods are of various lengths, as indicated in the descriptions of courses which include laboratory work.

*ROOM SCHEDULES*...The meeting places of courses will be given in a supplementary announcement which will be distributed to students on registration day.

*SCHEDULE OF EXAMINATIONS*...With a few exceptions, examinations will be held on Friday, August 11, and Saturday, August 12, at the hours indicated by the schedule below; in the exceptional cases, the examination will be held on Thursday, August 10, at 2. The usual classrooms will be used unless a change is announced by the instructor.

In courses which meet for more than one hour daily, the examination period is determined by the first hour at which they meet. For example, Economics 104 meets daily at 10 and at 11; the examination will be held on Friday at 10:30. In courses which include both lecture and

laboratory periods, the examination period is determined by the lecture hour. In courses in which no examination is to be given, an announcement to that effect will be made by the instructor; in such cases the last meeting of each course will be held in the examination period for that course.

*Examinations will be held as follows:*

- 8 o'clock classes, Friday at 8.
- 9 o'clock classes, Saturday at 8.
- 10 o'clock classes, Friday at 10:30.
- 11 o'clock classes, Saturday at 10:30.
- 12 o'clock classes, Friday at 2.
- Afternoon classes, Saturday at 2.

## EDUCATION

### ADMINISTRATION, SECONDARY EDUCATION, AND CURRICULUM

33. *THE TEACHING OF ENGLISH IN SECONDARY SCHOOLS.* (G) 2 hours credit. M T W Th F 11. Mrs. OCVRK.

This course is designed to help inexperienced and experienced teachers with methods and materials in the teaching of secondary English. Emphasis will be placed on the teaching of literature, composition, both oral and written, grammar, mechanics of expression, and correct usage. The class procedure and content will be geared to meet the needs of the individual teachers. Opportunity for unit planning and work on special electives will be given.

130. *SOCIAL STUDIES CURRICULUM PLANNING FOR THE SECONDARY GRADES.* (G) 2 hours credit. M T W Th F 8. Miss KLEE.

This course has been planned to give teachers an opportunity to investigate one or more areas of social studies teaching according to their particular interests or needs, for example, teaching for international understanding, geography and history of New York State, critical thinking, and so forth. Members of the class will carry on investigations or plan curriculum guides to be used in their own classes in accordance with their purposes in registering for the course.

261. *FUNDAMENTALS OF EDUCATIONAL ORGANIZATION AND ADMINISTRATION.* (G) 2 hours credit. M T W Th F 10. Professor BUTTERWORTH.

A consideration of the more important problems in organizing and administering the community's educational program.

265. *WORKSHOP ON THE SCHOOL PLANT.* (G) 6 hours credit. M T W Th F. First meeting at 9; conferences and other group meetings as arranged. Dr. ESSEX, Dr. WILSON, Mr. GILSON, Mr. STILSON of the New York State Department of Education, and other specialists.

Intended for school officials faced with the problem of planning a school building and individuals who are planning to become specialists in school plant planning. The workshop will deal with the important steps in the advancement of a school building project including survey of need, estimating probable enrollment, determining number and kinds of rooms, appraisal of plans, and administrative procedures. There will be available, for brief periods, specialists in school building architecture, heating and ventilating, lighting, home economics, agriculture, industrial arts, and other areas of instruction.

Enrollment is limited. Admission only by arrangement. For further information and for reservations address J. E. Butterworth, Stone Hall, Cornell University.

267. *THE LEGAL PROBLEMS OF THE SCHOOL ADMINISTRATOR*. (G) 3 hours credit. M T W Th F 2-3:15. Professor MACDONALD.

An analysis of representative problems in school administration having legal implications, with a discussion of the principles of law involved.

268. *SEMINAR: APPRAISING A LOCAL SCHOOL SYSTEM*. (G) 2 hours credit. M W F 11-12:30. Professor BUTTERWORTH.

A discussion of techniques for measuring the effectiveness of important phases of a school system and a consideration of ways and means of securing improvement.

276. *PRINCIPLES OF CURRICULUM BUILDING*. (G) 2 hours credit. M T W Th F 8. Assistant Professor ELLIOTT.

A consideration of the major problems, principles, and techniques in determining educational objectives and curriculum scope and content in elementary and secondary schools. Special attention will be given to recent developments in the curriculum.

290. *PRINCIPLES OF SECONDARY EDUCATION*. (U,G) 2 hours credit. M T W Th F 10. Assistant Professor ELLIOTT.

A consideration of recent trends in secondary education in the United States as to scope, aims, functions, organization, and curriculum. Special attention will be given to a selected number of basic problems.

#### AGRICULTURAL EDUCATION

133. *SPECIAL PROBLEMS IN TEACHING VOCATIONAL AGRICULTURE*. (U) 1 to 3 hours credit. Meetings to be arranged in practice centers. The STAFF in Agricultural Education.

Credit may be used toward certification requirements in New York State.

194. *PRINCIPLES OF VOCATIONAL EDUCATION*. (G; other students by permission of the instructor) 2 hours credit. M T W Th F 8. Associate Professor MARTIN.

232. *EVALUATION AND PROGRAM PLANNING IN AGRICULTURAL EDUCATION*. (G) 2 or 3 hours credit. Th 1-5:30, and one hour to be arranged. Associate Professor HOSKINS.

The evaluation of total programs of vocational education in agriculture in actual situations as a basis for effective planning.

233. *SUPERVISED FARMING PROGRAMS IN VOCATIONAL AGRICULTURE*. (G) 2 hours credit. W Th F 10 and W 1-4:30. Associate Professor MARTIN.

Field studies of programs in near-by schools, with critical study of basic concepts, development, and future needs.

238. *MATERIALS OF INSTRUCTION IN VOCATIONAL AGRICULTURE*. (G) 2 hours credit. Open to students with experience in teaching vocational agriculture. M T W Th F 9. Associate Professor HOSKINS, assisted by college instructors in subject-matter fields.

Evaluation, selection, and organization of instructional materials appropriate for use in teaching vocational agriculture classes.

*Note:* In addition to the above Summer Session offerings, workshops for critic teachers in Agricultural Education will be conducted off campus. Registration will be in the Division of Extramural Courses. These workshops will carry two hours of credit.

## APTITUDE AND ACHIEVEMENT TESTS

251. *EDUCATIONAL MEASUREMENT*. (G) 2 hours credit. M T W Th F 8. Associate Professor BAYNE.

The use and interpretation of tests by teachers and school officers as aids in the improvement of instruction.

255. *USE AND INTERPRETATION OF TESTS IN GUIDANCE*. (G) 2 hours credit. A course in measurement is prerequisite. M T W Th F 8. Professor WINSOR.

This course deals with the development, use, interpretation, and significance of psychological measuring devices as a basis for analyzing the capacities, interests, and abilities of individuals seeking vocational guidance.

607. *PSYCHOLOGICAL TESTS*. (U,G) 3 hours credit. With consent of the instructor, this course may be taken without observations for 2 hours credit. M T W Th F 9; observation hours to be arranged. Professor ABELSON.

Concepts of intelligence; individual and group tests of intelligence; principles underlying their construction and interpretation; use of tests in schools and in other fields. Lectures, readings, and observations of individual testing.

## EDUCATIONAL PSYCHOLOGY

111. *EDUCATIONAL PSYCHOLOGY*. (U) 2 hours credit. Not open to freshmen. M T W Th F 9. Professor GLOCK.

Designed for prospective teachers. Consideration of essential facts and principles of psychology and their practical application to problems in education.

215. *PSYCHOLOGY OF ADOLESCENCE*. (U,G) 2 hours credit. M T W Th F 10. Associate Professor BAYNE.

A study of behavior during adolescence; tasks involved in developing maturity; effect of preceding stages of development on maturity and adolescence.

218. *TEACHERS' PROBLEMS IN EDUCATIONAL PSYCHOLOGY*. (G) 2 hours credit. M T W Th F 11. Professor GLOCK.

Designed for experienced teachers, supervisors, guidance workers, and administrators. There will be an opportunity for students to center their interest in such fields as reading, arithmetic, spelling, discipline, personality, and adjustment.

612. *PSYCHOLOGY OF EXCEPTIONAL CHILDREN*. (G;U by permission) 2 hours credit. M T W Th F 11. Professor ABELSON.

Designed to give a scientific understanding of children who deviate from the usual; the gifted, the feeble-minded, the delinquent, those having special abilities or disabilities, those having personality defects, and those having sensory and physical handicaps. Lectures, reading, and case studies. Students who have not had or are not now taking a course in psychological tests may be admitted only with approval of the instructor.

## ELEMENTARY EDUCATION

37. *LANGUAGE ARTS IN THE ELEMENTARY SCHOOL*. (G) 2 hours credit. M T W Th F 9. Mrs. OCVIRK.

This course is planned to help the elementary teacher in selecting and conducting experiences in reading, writing, speaking, and listening. Emphasis will be placed on methods of presentation, materials available, and continuity in the program in English. Opportunity will be given to work on special units. Occasional demonstration work will be presented.

224. *SOCIAL STUDIES IN THE ELEMENTARY SCHOOL*. (G) 2 hours credit. M T W Th F 10. Miss KLEE.

This course will be conducted as a workshop in which group discussion is combined with curriculum planning. Attention will be given to the contributions which the social studies can make to general elementary education. Each member of the class will have the opportunity to organize learning experiences for the grade level in which he is most interested.

243. *PROCEDURES AND TECHNIQUES IN SUPERVISION.* (G) 2 hours credit. M T W Th F 9. Professor MOORE.

Designed for superintendents, supervisors, and principals; inexperienced students admitted only by permission. A consideration of the nature and purpose of supervision; the improvement of the learning-teaching process; skill in observations; analysis of methods; relationships between general and specific objectives; selection, analysis, and organization of subject matter; measuring and testing results; assisting teachers in professional growth.

*Note:* See also courses in other divisions.

### GUIDANCE AND PERSONNEL

280. *STUDENT PERSONNEL ADMINISTRATION IN COLLEGES AND UNIVERSITIES.* (G) 2 hours credit. M T W Th F 11. Dean ALLEN and Miss PEARD.

The scope, organization, and development of a student personnel program. Discussion of specific areas by visiting lecturers. Consultation on specific problems brought from particular schools. Designed to assist personnel officers and school and college administrators.

282. *EDUCATIONAL AND VOCATIONAL GUIDANCE.* (G) 2 hours credit. M T W Th F 9. Associate Professor NELSON.

Principles and practices of educational and vocational guidance. Historical and theoretical background of the guidance movement; educational, vocational, and community information needed; the study of the individual; group methods; counseling; placement and follow-up; the organization, administration, and appraisal of guidance programs.

283. *COUNSELING METHODS.* (G) 4 hours credit. M T W Th F 9-11. Prerequisite, course 282 or equivalent. Mr. LAFORTUNE.

Primarily for graduate students who wish to become certified as counselors. Techniques for counseling with individuals concerning various kinds of educational, vocational, and social adjustment problems.

284. *GROUP TECHNIQUES IN GUIDANCE.* (G) 2 hours credit. M T W Th F 10. Associate Professor NELSON.

Methods and materials for presenting occupational and orientation information to students. Deals with classes in occupations, orientation groups, field trips, clubs, work-experience programs, and other media.

285. *OCCUPATIONAL AND EDUCATIONAL INFORMATION.* (G) 4 hours credit. M T W Th F 11, and field trips as arranged. Mr. BOYLAN.

Survey and appraisal of occupations and educational opportunities; study of sources of educational and vocational information; job analysis; vocational trends. Field trips to places of employment.

### NATURE STUDY AND SCIENCE EDUCATION

107. *THE TEACHING OF NATURE STUDY AND ELEMENTARY SCHOOL SCIENCE.* (U,G) 2 hours credit. Lectures M W F 11; laboratory or field work, T Th 2-4:30. Mr. ECKERT.



The content and method of nature study and elementary school science with emphasis on the physical science aspects.

108. *FIELD NATURAL HISTORY*. (U,G) 2 hours credit. Lectures, M W 2-2:50. Field trips, M W 2:50-5:20, F 2-4:30. Assistant Professor GORDON.

Field trips and lectures devoted to a study of the natural history of various ecological units, with special emphasis on their contributions to the teaching of science.

205. *THE TEACHING OF CONSERVATION*. (U,G) 2 or 4 hours credit. Lectures M T W Th F 9. Laboratory or field work Saturday, July 8 and July 29, Tuesdays and Thursdays 7-9 a.m., and Monday evenings. Professor PALMER.

Materials and methods essential to the development of a program in conservation in schools and colleges primarily in terms of teacher needs. Laboratory work limited to twenty students and available to those who are taking the course or have taken it on a two-hour basis previously.

209. *THE DEVELOPMENT OF NATURE AND SCIENCE EDUCATION IN THE UNITED STATES*. (U,G) M T W Th F 10. Assistant Professor GORDON.

A survey of origins and developments in nature and science education, both in and out of schools, with emphasis on leaders and their philosophies.

#### GENERAL

199. *INFORMAL STUDY IN EDUCATION*. (U) Credit as arranged. Members of the STAFF of the School of Education.

This privilege may be granted to a qualified Cornell student of junior rank or above, with the approval of his adviser and the consent of the appropriate member of the Faculty of the School of Education.

244. *PHILOSOPHY OF EDUCATION*. (G) 2 hours credit. M T W Th F 11. Professor MOORE.

A critical consideration of educational philosophies which are generally recognized as significant influences upon education as an essential in American life.

293. *ADULT EDUCATION*. (G) 2 or 3 hours credit. For administrators, supervisors, extension agents, teachers, social workers, and others interested in Adult Education. M T W Th F 11. Additional hours to be arranged. Professor LEAGANS, Associate Professor PATTERSON and STAFF.

This course deals with the nature, scope, need, agencies, and major problems in Adult Education. Emphasis is placed on development and promotion of local programs, selection and use of teaching staff, selection of teaching procedures and materials, and appraisal of programs. The third credit provides opportunity for special study.

#### RESEARCH IN EDUCATION

479. See page 28.

300. *SPECIAL STUDIES IN EDUCATION*. (G) Credit as arranged. Members of the STAFF of the School of Education.

Students working on theses or other research projects may register for this course. The staff members concerned must be consulted before registration.

#### HOME ECONOMICS EDUCATION

403. *SPECIAL PROBLEMS IN HOME ECONOMICS EDUCATION*. (G) Credit and hours to be arranged. The STAFF of the Department.

This course provides opportunity for students to do independent, advanced work, with permission of the instructor with whom the problem is to be done. Plan B

Master's candidates who are working on studies may register for this course with approval of their chairmen.

407. *THESIS AND RESEARCH IN HOME ECONOMICS EDUCATION*. (G) Credit and hours to be arranged. The STAFF of the Department. Candidates for Plan A Master's degrees, Ph.D. degrees, and Ed.D. degrees who are working on theses may register for this course with permission of their chairmen and the instructor.

293. *ADULT EDUCATION*. (G) See Adult Education, p. 27.

†435. *METHODS AND MATERIALS IN TEACHING HOME ECONOMICS*. (G) 2 hours credit. M T W Th F 10. Assistant Professor MOSER.

Planned for experienced teachers who wish to study and experiment with a variety of teaching procedures and teaching materials. An opportunity will be given for work on individual problems. Fee, \$3.

†459. *EVALUATION IN HOME ECONOMICS*. (G) 2 hours credit. M T W Th F 11. Assistant Professor BLACKWELL.

This course is designed for teachers, extension agents, and research workers who are concerned with methods of evaluating educational programs and of appraising individual achievement. Opportunities for constructing, using, and evaluating instruments of appraisal. Fee, \$3.

†479. *RESEARCH IN EDUCATION*. (G) 2 or 3 hours credit. M T W Th F 9. Assistant Professor BLACKWELL, with other members of the School of Education FACULTY serving as consultants.

This course is designed to acquaint students with research in general education and in vocational education and with techniques in planning and carrying out research in the various educational fields. Opportunity for individual work on research problems. Fee, \$3.

\*†485. *SUPERVISION OF HOME MANAGEMENT RESIDENCE EXPERIENCE*. (G) 2 hours credit. Registration by permission of the instructor by June 15. M T W Th F 9; other hours to be arranged. July 24–August 11. Apt. A, Martha Van Rensselaer Hall. Assistant Professor CRAWFORD.

This course is planned for Home Management House advisers and others preparing for this type of teaching. Attention is focused on organization, supervision, and methods of teaching a residence course. Fee, \$3.

#### *Home Economics Education Conference for Teachers*

†*Refresher Conference for Teachers*, July 5–7. Auditorium, Van Rensselaer Hall. Members of the RESIDENT AND VISITING STAFF.

This conference is sponsored jointly by the Bureau of Home Economics, State Education Department, and Cornell University. It is planned for teachers who are interested in keeping in touch with current teaching materials and methods and in discussing educational problems. Registration fee, \$2.

For further information concerning this conference write to Professor Irene Patterson, College of Home Economics, Cornell University, Ithaca, N. Y.

#### INDUSTRIAL EDUCATION

332. *DEVELOPMENT OF COURSES OF STUDY IN INDUSTRIAL EDUCATION*. (U,G) 2 hours credit. M T W Th F 9. Mr. RODEN.

Study of the principles and procedures of course-of-study development. Content will include objectives of general and vocational education and their bearing on courses of study; controls which influence courses; interrelationships of courses within the curriculum; evaluation of courses of study. Emphasis will be placed upon the development of specific courses, based upon occupational and other analyses.

335. *WORKSHOP-DEVELOPMENT OF INSTRUCTIONAL MATERIALS.* (U,G) 6 hours credit. M T W Th F 8-4:30. Mr. RANNEY.

A workshop designed to provide opportunity, through consultant service and laboratory facilities, for students to prepare and revise instructional materials for courses in industrial and technical education. Students will be expected to have done preliminary work on their instructional materials and to bring with them such data as will be useful. Permission of the instructor is required.

336. *INDUSTRIAL AND TECHNICAL EDUCATION ON THE POST-SECONDARY LEVEL.* (U,G) 2 hours credit. M T W Th F 10. Professor EMERSON.

A study of the historical background, present development, and trends in industrial and technical education for adults and for recent high school graduates. Deals with technical institute education; industrial and technical education in the junior college; pre-employment and occupational extension programs, including apprenticeship; patterns of organization and administration; relationships of these programs with the high school and the college; legislation; and a comparative study of developments in this field in various parts of the United States.

530. *INDUSTRIAL EDUCATION.* (G) 2 hours credit. M T W Th F 8. Professor EMERSON.

A graduate course providing a broad overview of educational principles and practices pertaining to training within industry, workers' education, and industrial education in public and private institutions. Basic principles of adult education; methods of teaching adults; development of courses of study; appraisal and development of instructional materials; organizational patterns of programs; legislation affecting industrial education; interrelationships between public industrial education, management, and organized labor.

630. *SUPERVISION OF INDUSTRIAL EDUCATION.* (G) 2 hours credit. M T W Th F 8.

Study of the nature and purpose of educational supervision; fundamental principles of supervision; techniques and methods of supervision; the planning and organization of a supervisory program; the supervisor's responsibility for appraising the adequacy of equipment, materials, and supplies for instructional purposes; relationships of the supervisor to administrators and teachers; evaluation of student and teacher achievement.

632. *ADMINISTRATION OF INDUSTRIAL EDUCATION.* (G) 2 hours credit. M T W Th F 10.

Study of administrative practices in industrial and technical schools. Relationships of the administrator with other school officers; advisory committees and their functions; public relations; problems of plant and equipment; budgetary procedures; staff personnel relations; teacher selection and induction; student personnel procedures; evening school organization and administration.

634. *INDUSTRIAL EDUCATION IN SMALLER COMMUNITIES.* (G) 2 hours credit. M T W Th F 9. Associate Professor BROPHY.

The organization and conduct of industrial education programs serving smaller high schools or consolidated school districts. Emphasis will be placed upon diversified part-time cooperative programs, apprentice training classes and vocational schools, county unit programs, and intermediate school districts.

635. *SEMINAR IN INDUSTRIAL ARTS EDUCATION.* (G) 2 hours credit. M T W Th F 11. Mr. RODEN.

Intended for graduate students with experience in industrial arts education. A study of current problems affecting industrial arts education.

## EXTENSION EDUCATION

From July 17 to August 5, inclusive, six courses for credit are offered primarily for the professional improvement of persons engaged in extension work in agriculture, home economics, and boys' and girls' club work. Emphasis is on program building, 4-H Club organization, public policy, sociology, extension information service, evaluation, and their application in extension education. Afternoons will be devoted to optional activities such as field trips, visits to laboratories, attention to various projects of interest, and individual lectures. Applicants should note that these are unit courses beginning two weeks later than the regular session. The tuition fee is \$40. For full particulars the Extension Service Summer School Announcement may be obtained by writing Professor L. D. Kelsey, Roberts Hall, Cornell University.

Two courses are given in each period. Each period is 75 minutes in length, with 15 minutes between classes. Courses daily except Saturday, July 29, and Saturday, August 5. A student may register in two courses only. Each course gives 1½ hours credit.

## 8 A.M.

1. *EXTENSION INFORMATION.* (G) 1½ hours credit. Professor LONGSDORF. Warren Hall, Room 140.

A course designed to assist county and state extension workers to use with maximum efficiency newspapers, radio, publications, circular letters, exhibits, posters, and visual aids. Throughout, suggestions are offered on subject-matter presentation. The workshop plan is followed, giving students opportunity to take part in discussions, news writing, radio presentations, letter writing, picture taking, and planning for a practical program of information that can be used upon their return to their posts of duty. The course emphasizes the practical application of journalism to everyday extension work. It is a course planned "to learn by doing."

2. *SOCIOLOGY FOR EXTENSION WORKERS.* (G) 1½ hours credit. Daily. Associate Professor CLARK. Warren Hall, Room 240.

This course emphasizes (1) the selection and training of volunteer leaders; (2) forms of individual and group motivation; (3) participation patterns of rural people; (4) increasing the effectiveness of organized groups; and (5) methods of determining the needs and resources of communities. Lectures, discussions, committee assignments, and demonstrations will be used.

## 9:30 A.M.

3. *EXTENSION EVALUATION.* (G) 1½ hours credit. Daily. Mrs. SABROSKY. Warren Hall, Room 140.

Evaluation, clarification of objectives, techniques that any extension worker might use in measurement, sampling procedures, analysis, interpretation, presentation, and use of data. It is not the intention to make a "studies expert" of each student but to give a broad concept of extension program development and methods of systematical-ly appraising the work.

4. *PROGRAM BUILDING.* (G) 1½ hours credit. Daily. Professor LEAGANS. Warren Hall, Room 240.

A systematic analysis of the extension program building process with emphasis on basic principles and procedures for applying them. The course is designed to help extension workers further develop a workable understanding of the nature of the program building process and to help them acquire some useful approaches. Special consideration is given to procedures for (1) arriving at objectives for programs, (2) designing educational activities likely to attain those objectives, and (3) organizing

educational effort so as to attain continuity and integration in long-time programs. The approach is equally applicable to homemaking and agricultural activity. Students expecting to enroll in this course are encouraged to bring sample materials such as county programs and statements of procedures now in use.

### 11 A.M.

5. *PUBLIC POLICY*. (G) 1½ hours credit. Daily. Professor MAUCH. Warren Hall, Room 140.

Describes and presents analyses of some of the more important problems of agriculture that involve organized or governmental action. These may be state, regional, national, or international, with political, social, or economic implications; examples are price support, production controls, income plans, trade agreements, land use, housing, labor problems, and collective bargaining. (This list is only suggestive and is not to be taken as final or inclusive.)

6. *4-H CLUB ORGANIZATION AND PROCEDURES*. (G) 1½ hours credit. Daily. Mr. AITON. Warren Hall, Room 240.

Especially designed for county 4-H Club agents and other extension youth workers. Beginning with a study of the developmental needs of young people, the course builds a modern concept of youth programs embracing three phases: junior 4-H Club work, senior 4-H Club work, and extension work with young men and women. Objectives, planning, leader training, and operational problems of 4-H Club programs are treated. The course is presented by a combination of lectures, demonstrations, and discussion methods.

## ENGLISH AND JOURNALISM

### ENGLISH

302. *MODERN DRAMA*. (U,G) 2 hours credit. M T W Th F 8. Mr. PARTRIDGE. The drama since Ibsen; important European and American plays; types and forms.

310. *ENGLISH POETRY OF THE SEVENTEENTH CENTURY*. (U,G) 2 hours credit. M T W Th F 9. Dr. NOVARR.

Critical study of poets from Donne to Dryden, not including Milton.

313. *ENGLISH LITERATURE OF THE EARLY EIGHTEENTH CENTURY*. (U,G) 2 hours credit. M T W Th F 11. Assistant Professor HEALEY.

Readings in the prose and poetry of Pope, Swift, Addison, Steele, and their contemporaries.

317. *WORDSWORTH AND COLERIDGE*. (U,G) 2 hours credit. M T W Th F 10. Associate Professor MINEKA.

Selected poems and critical prose of Wordsworth and Coleridge.

321. *VICTORIAN PROSE OF SOCIAL CRITICISM*. (U,G) 2 hours credit. M T W Th F 12. Associate Professor MINEKA.

Essays of political, social, and educational criticism by Carlyle, Arnold, Ruskin, and others. Textbook: Harrold and Templeman, *English Prose of the Victorian Era*.

324. *TENNYSON AND THE PRE-RAPHAELITES*. (U,G) 2 hours credit. M T W Th F 10. Professor FRENCH.

The chief short poems of Tennyson, Rossetti, Swinburne, and others. Textbook: Stephens, Beck, and Snow, *Victorian and Later English Poets*.

329. *AMERICAN LITERATURE TO 1860*. (U,G) 2 hours credit. M T W Th F 10. Professor MYERS.

The writings of Franklin, Edwards, Poe, Emerson, Thoreau, Hawthorne, Melville, and others, with emphasis on democratic ideals and problems.

333. *THE ENGLISH NOVEL IN THE EIGHTEENTH CENTURY.* (U,G) 2 hours credit. M T W Th F 12. Assistant Professor HEALEY.

Critical study of novels of Defoe, Fielding, Smollett, Sterne, and Goldsmith.

336. *THE MODERN AMERICAN NOVEL OF MANNERS.* (U,G) 2 hours credit. M T W Th F 11. Assistant Professor FREEMAN.

Modern American novelists of manners and society, including Henry James, Edith Wharton, Ellen Glasgow, Willa Cather, and J. P. Marquand. The course does not duplicate English 335, offered in 1949.

341. *ELIZABETHAN AND EARLY STUART DRAMA.* (U,G) 2 hours credit. M T W Th F 8. Dr. NOVARR.

An introduction to the main course of English dramatic literature from 1580 to 1642. Shakespeare's plays are not included.

349. *RECENT AMERICAN POETRY.* (U,G) 2 hours credit. M T W Th F 12. Professor FRENCH.

American poetry since 1900: Frost, Sandburg, Eliot, MacLeish, and others. Text-books: Louis Untermeyer, *Modern American Poetry*; Sanders and Nelson, *Chief Modern Poets of England and America*.

385. *NARRATIVE WRITING.* (U,G) 2 hours credit. M T W Th F 9, and conferences to be arranged. Assistant Professor HATHAWAY.

Theory and practice in the writing of fiction and allied narrative forms.

402. *PRINCIPLES OF LITERARY CRITICISM.* (U,G) 2 hours credit. M T W Th F 11. Assistant Professor HATHAWAY.

Selected critical works from the Renaissance to modern times.

411. *THE TEACHING OF THE ENGLISH LANGUAGE AND COMPOSITION.* (U,G) 2 hours credit. T Th 2-4. Professor SALE.

For teachers and prospective teachers, a study of the work of modern linguists, grammarians, and rhetoricians.

470. *SHAKESPEARE'S TRAGEDIES.* (U,G) 2 hours credit. M T W Th F 9. Dr. SCHOECK.

Shakespeare's dramatic art as illustrated in his tragedies.

547. *SEMINAR: AMERICAN LITERATURE.* (G) 2 hours credit. Assistant Professor FREEMAN.

An investigation of the significance of Henry James in the development of the modern novel.

551. *SEMINAR: DRAMATIC LITERATURE.* (G) 2 hours credit. T Th 2-4. Professor MYERS.

A study of the theory of tragedy and of representative examples.

904. *SPECIAL TOPICS FOR INVESTIGATION.* (G) 2 hours credit. Conferences to be arranged.

For graduate students writing Masters' essays or engaging in special research. The course is administered by various members of the staff; students who wish to be put in touch with a suitable director for the work they have in mind may write to or consult Professor W. H. French.

*MASTERPIECES OF GREEK LITERATURE IN TRANSLATION.* (See Classics I.) (U,G) 2 hours credit. M T W Th F 9. Assistant Professor KIRKWOOD.

May be counted in satisfying the requirements for a major in English.

## JOURNALISM

200. *NEWS WRITING AND EDITING*. (U,G) 2 hours credit. Lectures M T W Th F 9. Professor CAMPBELL.

Technique and style of news stories; spot news, educational news and features, human interest and various other types of news writing; editing, make-up and general production of newspapers.

201. *MAGAZINE ARTICLE WRITING*. (U,G) 2 hours credit. Lectures M T W Th F 11. Professor CAMPBELL.

This course gives the student the opportunity to write nonfiction articles in any field of his choice and submit them to magazines for publication; manuscripts will be analyzed by the instructor and the class.

## FINE ARTS

## ART, HISTORY AND APPRECIATION

102. *INTRODUCTION TO RENAISSANCE AND MODERN ART*. (U,G) 2 hours credit. Lectures M T W Th F 12. Professor WAAGE.

The relationship of art to society in Western Europe from 1400 to the present, as exemplified in the works of the major painters and sculptors.

507. *TWENTIETH CENTURY ART*. (U,G) 2 hours credit. Lectures M T W Th F 10. Professor WAAGE.

The consequences of the divorce of painting and sculpture from social function; painters' painting and expressionism; individualistic and clique vagaries; attempts toward reintegration.

## DRAWING AND PAINTING

300. *PAINTING AND COMPOSITION*. (U,G) 2 hours credit. M T W Th F 8-10. Associate Professor DALY.

A studio course dealing with the fundamentals of painting. In the study of some of the principal considerations of modern art, the classroom assignments progress from simple to more complex pictorial organizations. Though not an elementary presentation the course has no prerequisites and is open to both beginners and intermediate students. Media: tempera and casein.

302. *PAINTING AND COMPOSITION*. (U,G) 2 to 6 hours credit. M T W Th F 10-12. Registration by permission of the instructor. Associate Professor DALY.

Studio work for students with considerable experience in painting who can develop given themes with certain assurance and clarity. Principally independent work with regular criticism.

324. *WORKSHOP FOR THE ART TEACHER*. (G) 2 hours credit. M T W Th F 10-12. Associate Professor DALY.

Combined seminar and studio course. Problems of materials and methods for teaching art in elementary and secondary schools; for those who have teaching experience as well as those who are teaching art for the first time. Individual needs are considered, and opportunity for discussion is provided. Part of the course is given to planning art curricula and to methods of presentation and emphasis.

## MUSIC

101. *THE ART OF MUSIC*. (U) 2 hours credit. M T W Th F 11. Associate Professor BOYDEN.



An approach to the understanding and rational enjoyment of the art of music, offered especially for students who have had no technical training in the subject. Most of the outside work consists of listening to phonograph records.

377. *SEMINAR IN MUSICOLOGY*. (G) 2 hours credit. Prerequisites, a knowledge of music theory and general music history and some skill in applied music and score reading; also (depending on the topic chosen) a reading knowledge of the requisite foreign language or languages. Hours to be arranged. A particular topic of study will be assigned to each student after consultation. Associate Professor BOYDEN.

021. *INFORMAL STUDY*. (U,G) Credit and time to be arranged after consultation. Mrs. SQUIRE.

†401. *PIANO*. (U) 1 hour credit (this credit may be counted toward a Cornell degree only by those students who have at least two hours credit in theoretical or historical music courses). Prerequisite, consent of the instructor. Hours to be arranged. Mrs. SQUIRE.

For two half-hour lessons weekly throughout the Summer Session, a special fee of \$30 is charged. Fee payable at the office of the Department of Music at time of registration with the instructor.

*SAGE CHAPEL CHOIR*. All men and women interested in singing in the Sunday Chapel services may report to Mrs. SQUIRE at 7 p.m. on July 3, in the choir loft of Sage Chapel, for discussion of plans and decision on a suitable schedule of rehearsals.

*SUMMER SESSION ORCHESTRA*. Applications should be made to Associate Professor BOYDEN, 320 Wait Avenue, during registration period or at the first rehearsal, which will be held Wednesday, July 5, in Van Rensselaer Auditorium at 7 p.m.

## LANGUAGES

### DIVISION OF MODERN LANGUAGES

Professors J. M. COWAN, W. G. MOULTON; Associate Professors F. B. AGARD, R. A. HALL, Jr., and C. F. HOCKETT; Assistant Professor G. H. FAIRBANKS.

The system of course numbering is the same for all languages offered by the Division. Courses 101 and 102 in a given language aim at bringing the student to a level of achievement sufficient to enable him to pass the Proficiency Examination and thus fulfill the language requirement for graduation. These courses are the equivalent of courses 101 and 102 offered in the regular academic year.

Course 151 is designed to assist graduate students to prepare themselves for the reading examinations required by the Graduate School. This course is to be considered as a full-time program by the student, and the equivalent of six hours of undergraduate credit will be allowed. In actual practice those registered in 151 will participate in the oral drill as set up for 101, but they will be given special reading and outside assignments consonant with their needs and abilities. If fewer than eight students register for this course, the instruction given will be identical with that in 101.

All courses constitute a full academic program of six credit hours and consist of twenty hours of instruction each week at periods to be assigned. Registration for these courses will be closed when the capacity of the sections has been reached.

101. *FRENCH*. (U) 6 hours credit. Associate Professor AGARD and assistants.

102. *FRENCH*. (U) 6 hours credit. Prerequisite, French 101 or equivalent. Associate Professor AGARD and assistants.



151. *FRENCH*. For graduate students acquiring reading proficiency; 6 hours credit. Associate Professor AGARD and assistants.

101. *GERMAN*. (U) 6 hours credit. Professor MOULTON and assistants.

102. *GERMAN*. (U) 6 hours credit. Prerequisite, German 101 or equivalent. Professor MOULTON and assistants.

151. *GERMAN*. For graduate students acquiring reading proficiency. 6 hours credit. Professor MOULTON and assistants.

101. *SPANISH*. (U) 6 hours credit. Associate Professor AGARD and assistants.

102. *SPANISH*. (U) 6 hours credit. Prerequisite, Spanish 101 or equivalent. Associate Professor AGARD and assistants.

## LITERATURE AND PHILOSOPHY

### CLASSICS

1. *MASTERPIECES OF GREEK LITERATURE IN TRANSLATION*. (U,G) 2 hours credit. M T W Th F 9. Assistant Professor KIRKWOOD.

A study, in historical sequence, of selected examples of the principal types of Greek literature: epic, lyric, drama, dialogue, oratory, bucolic poetry, biography, Lucianic satire, the Greek novel. Attention will be given to later influence, especially upon English literature. Readings, lectures, discussions.

2. *ROMAN CRITICS OF SOCIETY: THE SATIRISTS*. (U,G) 2 hours credit. M T W Th F 10. Assistant Professor KIRKWOOD.

Readings, in Latin, from the Roman satirists, Lucilius to Juvenal, to illustrate their awareness of the tensions in Roman social and economic life; background readings in social and economic history.

3. *THESES AND INFORMAL WORK*. (G) credit by arrangement; total credit for thesis may not exceed six hours. Assistant Professor KIRKWOOD.

### PHILOSOPHY

101. *PHILOSOPHICAL CLASSICS*. (U) 2 hours credit. M T W Th F 12. Associate Professor MALCOLM.

A careful study of three Socratic dialogues, Plato's *Republic*, and J. S. Mill's *Utilitarianism* and *On Liberty*.

103. *ELEMENTARY LOGIC*. (U) 2 hours credit. M T W Th F 2. Associate Professor MALCOLM.

An elementary study of valid inference and the causes of fallacy.

## PSYCHOLOGY

### MENTAL HYGIENE

1. *MENTAL HYGIENE*. (U,G) 2 hours credit. M T W Th F 9 or 11. Professor DARLING.

The human being considered as a psychobiologic unit in a complex environment. Discussion of (1) general personality structure, (2) maladjustment factors functioning at different ages from infancy through life, (3) the more common maladjustment symptoms and mental illness and their prevention.

## PSYCHOLOGY

101. *ELEMENTARY PSYCHOLOGY*. (U) 2 hours credit. M T W Th F 9. Dr. HARALSON.

This course deals with the basic problems and principles of human psychology and is designed as a general foundation for the study of experimental, social, animal, and child psychology, for psychotechnology, and for the psychology of the abnormal.

303. *ABNORMAL PSYCHOLOGY*. (U,G) 2 hours credit. Prerequisite, at least 9 hours of psychology. M T W Th F 11. Professor LIDDELL.

Psychobiology and psychodynamics of life stress in relation to mental disorder.

404. *PSYCHOBIOLOGY*. (U,G) 2 hours credit. Prerequisite, at least 9 hours of psychology. M T W Th F 8. Professor LIDDELL.

The principal biological mechanisms of behavior with special reference to man.

450. *INDUSTRIAL PSYCHOLOGY*. (U) 2 hours credit. Prerequisite, Psychology 101 or equivalent. M T W Th F 10. Professor RYAN.

Experimental and statistical analysis of psychological problems in industrial selection and training, fatigue and efficiency, advertising, selling, and market research.

520. *MOTIVATION*. (U) 2 hours credit. Prerequisite, Psychology 101 or equivalent. M T W Th F 11. Dr. HARALSON.

A systematic study of the initiation, direction, and regulation of behavior.

575. *CURRENT PSYCHOLOGICAL THEORY*. (U,G) 2 hours credit. Prerequisite, at least 12 hours of psychology. M W 2-4. Professor RYAN.

Systematic examination of the major theoretical developments in contemporary psychology.

607. *PSYCHOLOGICAL TESTS*. (U,G) 3 hours credit. With consent of the instructor, this course may be taken without observations for 2 hours credit. M T W Th F 9; observational hours to be arranged. Professor ABELSON.

Concepts of intelligence; individual and group tests of intelligence; principles underlying their construction and interpretation; use of tests in schools, in the armed services, and in other fields. Lectures, reading, and observations of individual testing.

612. *PSYCHOLOGY OF EXCEPTIONAL CHILDREN*. (G;U by permission) 2 hours credit. M T W Th F 11. Professor ABELSON.

Designed to give a scientific understanding of children who deviate from the usual: the gifted, the feeble-minded, the delinquent, those having special abilities and disabilities, those having personality defects, and those having sensory and physical handicaps. Lectures, reading, and case studies. Students who have not had or are not now taking a course in psychological tests may be admitted only with approval of the instructor.

## SPEECH AND DRAMA

## RADIO

202. *RADIO IN EDUCATION*. (U,G) 2 hours credit. Lectures and studio seminars M W 2-4:30. Assistant Professor FOSTER.

Use of radio in the school curriculum; its purposes, the programs available, necessary equipment, and techniques of classroom utilization. Evaluation of sample school scripts and recordings. Special attention given to programs available in New York State. An introduction to planning, writing, and producing the educational radio program. Laboratory work in a radio studio.

## SPEECH AND DRAMA

101. *PUBLIC SPEAKING*. (U) 2 hours credit. M T W Th F 11. Professor WICHELS.

Practice in speech making on topics of current interest. Methods of preparation and delivery studied in relation to practice; class discussion; conferences. Regular students passing the course are admitted to Speech and Drama 102 and 213.

131. *VOICE TRAINING*. (U,G) 2 hours credit. M T W Th F 8. Professor THOMAS.

An elementary course for the improvement of the speaking voice. Individual and group practice in the overcoming of such faults as nasality, weak quality, and indistinctness. Attention to the principles of voice production.

205. *DISCUSSION*. (U,G) 2 hours credit. M T W Th F 9. Assistant Professor ARNOLD.

Principles and practice of group thinking; an introduction to systematic investigation and reflective thinking with application to current questions; practice in various types of group discussion.

227. *ORATORY AS A LITERARY FORM*. (U,G) 2 hours credit. M T W Th F 10. Professor WICHELS.

A study of masterpieces of public address: Biblical, classical (in translation), and English.

290. *THESES AND SPECIAL PROBLEMS IN PUBLIC ADDRESS*. (G) 2 or more hours credit. Professor WICHELS.

Required of regularly registered summer session graduates working on theses. Open to other graduates prepared for the independent study of special topics in rhetoric and public speaking.

333. *TEACHERS' COURSE IN PHONETICS AND SPEECH TRAINING*. (U,G) 2 hours credit. M T W Th F 9. Professor THOMAS.

A study of English phonetics, pronunciation, and the improvement of speech; primarily for secondary and elementary school teachers.

390. *THESES AND SPECIAL PROBLEMS IN SPEECH TRAINING AND PHONETICS*. (G) 2 or more hours credit. Professor THOMAS.

Required of regularly registered summer session graduates\* working on theses. Open to other graduates prepared for the independent study of special topics in speech training and phonetics.

401. *DRAMATIC PRODUCTION: DIRECTION*. (U,G) 2 hours credit. M T W Th F 10. Associate Professor ALBRIGHT.

For upperclassmen and graduates. Theory of stage direction; fundamentals of theatrical mounting; survey of practical phases of production. Prerequisite for further work in Dramatic Production.

421. *DRAMATIC INTERPRETATION*. (U,G) 2 hours credit. M W F 3-5. Associate Professor ALBRIGHT.

A practice course in oral interpretation, pantomime, acting, and group rehearsal.

433. *THEATRE PRACTICE*. (U,G) 2 or 4 hours credit. Hours to be arranged. Mr. JEWETT and the Theatre Staff.

Technical practice co-ordinated with the regular productions of the Summer Theatre; readings in the techniques involved.

461. *PLAYWRITING*. (U,G) 2 hours credit. T Th 2-4:15. Professor DRUMMOND.

Dramatic theory and practice. Three one-act plays will be written during the term.

475. *INTRODUCTION TO MODERN THEORIES OF DRAMATIC PRODUCTION*. (U,G) 2 hours credit. M T W Th F 11. Professor DRUMMOND.

Principles of theatrical presentation, with special attention to the development of modern theatre art and criticism. Lectures, readings, and reports. Textbook: Gorelik's *New Theatres for Old*.

†480. *THE MOTION PICTURE: A SURVEY*. (U,G) 2 hours credit. M T W Th F 12 and a weekly projection period to be arranged. Associate Professor STANTON.

The development of the motion picture as a modern art. Characteristic problems and devices of the art; economic and social aspects; the documentary film; the educational film.

Numerous films will be viewed. Students are required to attend the film programs of the Summer Theatre. Fee, \$3.

490. *THESES AND SPECIAL PROBLEMS IN DRAMA AND THE THEATRE*. (G) 2 or more hours credit. Professors DRUMMOND, STANTON, and ALBRIGHT.

Required of regularly registered summer session graduates working on theses. Open to other graduates prepared for the independent study of special topics in drama and the theatre.

*SPEECH CLINIC*. No credit. For students working under the direction of the department. Professor THOMAS. By appointment.

## SOCIAL SCIENCES

### ECONOMICS

104. *ELEMENTS OF ECONOMICS*. (U,G) 4 hours credit. M T W Th F 10-12. Mr. HOWARD.

A general introductory survey of the economic system, with special reference to the function of price. This course or its equivalent is prerequisite to all other courses in economics.

203. *MONEY, CURRENCY, AND BANKING*. (U,G) 2 hours credit. Prerequisite, an elementary course in economics. M T W Th F 11. Assistant Professor KAHN.

A study of the functioning of our monetary system and its repercussions on the economy.

325. *COMPETITION AND MONOPOLY*. (U,G) 2 hours credit. Prerequisite, an elementary course in economics. M T W Th F 9. Assistant Professor KAHN.

An assessment of the extent to which our present enterprise system is competitive and of the public policies which attempt to keep it so.

910. *ECONOMICS OF DISSENT*. (U,G) 2 hours credit. Prerequisite, an elementary course in economics. M T W Th F 10. Professor MONTGOMERY.

A study of the literature of social protest, of unorthodox or dissenting economic doctrines; of the various types of economic organization that have been proposed or attempted, including Marxian Socialism, Collectivism, Anarchism, the Single Tax, Syndicalism, and Fabian Socialism; and of problems of pricing and allocation of resources in collectivist and capitalistic economies.

982. *PROBLEMS OF THE AMERICAN ECONOMY*. (U,G) 2 hours credit. Prerequisite, an elementary course in economics. M T W Th F 11. Professor MONTGOMERY.

A survey of some of the more important problems of contemporary America and of proposed public policies in respect to them. Among the topics covered: the institutional characteristics of postwar economic life, the American ideological heritage,

the problem of full employment and economic stability, international economic relations, proposals for effecting changes in the distribution of income, monetary and financial issues, current problems of labor, and the role of government in economic life.

#### FAR EASTERN STUDIES

201. *INTRODUCTION TO CONTEMPORARY CHINA*. (U,G) 2 hours credit. M T W Th F 12. Professor BIGGERSTAFF.

Introduction to the land, the people, and the social, political, and economic life and organization of modern China. Intended to provide necessary background for an understanding of events in China today.

#### GOVERNMENT

101. *AMERICAN NATIONAL GOVERNMENT*. (U,G) 2 hours credit. M T W Th F 9. Professor Post.

A study of the principles and organization of the national government.

234. *AMERICAN POLITICAL PHILOSOPHY*. (U,G) 2 hours credit. M T W Th F 11. Professor Post.

A study of the theories underlying American political institutions, and the ideas of the leading American political philosophers and statesmen.

#### HISTORY

142. *HISTORY OF EUROPE, 1815 TO THE PRESENT*. (U,G) 2 hours credit. M T W Th F 8. Associate Professor GUSTAVSON.

Beginning with the Congress of Vienna, this survey covers the rise and decline of liberalism, the social and political repercussions of the Industrial Revolution, and the emergence of new political philosophies in an era of social upheaval and World Wars.

152. *AMERICAN HISTORY, 1865 TO THE PRESENT*. (U,G) 2 hours credit. M T W Th F 11. Assistant Professor PIERCE.

A survey course emphasizing reconstruction after the Civil War, occupation of the West, urban development, the rise of modern industry and transportation, and related political problems; and foreign policy, particularly after 1890.

164. *RECENT HISTORY OF THE FAR EAST*. (U,G) 2 hours credit. M T W Th F 9. Professor BIGGERSTAFF.

A history of the international relations of China and Japan during the twentieth century, with emphasis upon the causes and consequences of World War II in Eastern Asia.

427. *EUROPE SINCE 1919*. (U,G) 2 hours credit. M T W Th F 10. Associate Professor GUSTAVSON.

The twenty-year armistice, World War II, and the problems of today — with particular emphasis on the challenges of Fascism and Communism, the struggle of democratic governments for survival, and the trend toward unification.

726. *MAIN CURRENTS IN AMERICAN HISTORY SINCE 1900*. (U,G) 2 hours credit. M T W Th F 9. Assistant Professor PIERCE.

An advanced course emphasizing the emergence of modern economic problems and their effects upon political policy and reform. The rise of the United States as a world power. Special emphasis upon recent research relating to the period.

735. *HISTORY OF NEW YORK, 1624 TO 1896*. (U,G) 2 hours credit. M T W Th F 8. Mrs. Fox.

Economic and political rivalries within New York Province will be examined as background for the movement toward independence. Economic, social, and political movements of the nineteenth century will be developed in terms of the activities of state leaders of national influence and of their relationships to local conditions, demands, and personalities. The Collection of Regional History will be used as a research center, and particular attention will be given to the development of bibliographical aids, to discussion of the use of manuscript material in teaching and writing, and to the individual needs of teachers of New York State history.

### SOCIOLOGY, ANTHROPOLOGY, AND RURAL SOCIOLOGY

†12. *RURAL SOCIOLOGY*. (U,G) 3 hours credit. M T W Th F 7:30-8:50. Assistant Professor REEDER.

A consideration of the principles of rural sociology and their application to rural community problems. Designed especially for students who expect to live in a rural community and work with rural people. Fee for materials, \$1.

†32. *TECHNIQUES OF WORKING WITH GROUPS*. (U,G) 2 hours credit. M T W Th 11-12:30. Associate Professor CLARK.

Application of recent theories and principles of group dynamics to the methods of working with groups, such as committees, conferences, discussion groups, community councils, etc. Special emphasis will be placed on laboratory exercises in selecting and training leaders, leader-member relations, productivity and evaluation of group processes. Fee for materials, \$1.50.

103. *SOCIAL PROBLEMS*. (U,G) 2 hours credit. M T W Th F 10. Professor ANDERSON.

Major social problems of modern society viewed in terms of factors underlying social disorganization and individual maladjustment.

†111. *COMMUNITY ORGANIZATION*. (U,G) 2 hours credit. M T W Th F 10. Assistant Professor REEDER.

A consideration of the problems involved in helping people and organizations in a community work together to meet their common needs. Helping schools, churches, farm organizations, and civic groups fit themselves effectively into the life of the community is one part of this consideration. Students are given an opportunity to practice some organization techniques that have been found successful in community organization work. Fee for materials, \$1.

208. *SYSTEMATIC SOCIOLOGY*. (U,G) 2 hours credit. M T W Th F 8. Professor ANDERSON.

This course presents a frame of reference for sociological thinking, with special emphasis on the interrelationships of the concepts in a system of sociology.

301. *SOCIAL PSYCHOLOGY: INTER-PERSONAL BEHAVIOR*. (U,G) 2 hours credit. M T W Th F 9. Mr. FOOTE.

Social psychological analysis of the processes and products of personal interaction.

435. *THE URBAN COMMUNITY*. (U,G) 2 hours credit. M T W Th F 11. Mr. FOOTE.

The dynamics of urban growth and differentiation as the setting for analysis of six representative ethnic and economic conflicts of American cities.

440. *ANALYSIS OF SOCIAL STRUCTURE*. (U,G) 2 hours credit. M T W Th F 10. Assistant Professor GOODENOUGH.

The forms of social organization and the analysis of their interrelationships. The family, clan organization, kinship systems, age and secret societies and other structures in various cultures.

601. *CULTURAL ANTHROPOLOGY*. (U,G) M T W Th F 9. Assistant Professor GOODENOUGH.

The economic, social, political, and religious life of preliterate peoples.

## INDUSTRIAL AND LABOR RELATIONS

220. *HUMAN RELATIONS*. (U,G) 2 hours credit. M T W Th F 8. Professor McCONNELL.

An analysis and appraisal of the social and psychological factors important in human relations in industry. The course is aimed at giving the student some general acquaintance with the field and some methods for approaching the human problems he is likely to encounter. Topics covered include appropriate orientation in terms of natural and social science, the equilibrium of the individual, the equilibrium of the group, factors affecting productivity and the properties of industrial hierarchies.

260. *PERSONNEL ADMINISTRATION*. (U,G) 2 hours credit. M T W Th F 11. Associate Professor BROPHY.

A study of the ways of working with employees, as individuals and in groups, to ensure the best use of individual capacities, the greatest amount of personal and group satisfaction, and maximum service to the employing organization. Consideration is given to the development and organization of personnel administration, factors influencing the administration and appraisal of personnel functions, including recruitment, selection, training and communications, job evaluation, compensation, performance rating, transfer, promotion, separation, employee services, health and safety, records and reports, and research.

293. *SURVEY OF INDUSTRIAL AND LABOR RELATIONS*. (U) 2 hours credit. M T W Th F 11. Professor KONVITZ.

A survey for students in other divisions of the University and from other institutions. The course will include an analysis of the major problems in industrial and labor relations: labor union history, organization, and operation; labor market analysis and employment practices; industrial and labor legislation and social security; personnel management and human relations in industry; collective bargaining; mediation, and arbitration; the rights and responsibilities of employers and employees; and the major governmental agencies concerned with industrial and labor relations.

294. *PUBLIC ISSUES IN INDUSTRIAL AND LABOR RELATIONS*. (U,G) 2 hours credit. M T W Th F 10.

A limited number of current issues will be selected as a means of analyzing such basic social problems as the full employment of labor and resources; instability and security; freedom and control; minimum levels of economic welfare. Designed for students who are not majors in Industrial and Labor Relations.

300. *LABOR RELATIONS LAW AND LEGISLATION*. (U,G) 2 hours credit. M T W Th F 9. Professor KONVITZ.

A study of the common law and legislation relating to labor relations, on both federal and state levels. The antitrust laws as they affect labor relations, the Norris-LaGuardia Act, the Wagner Act, the Taft-Hartley Act, and the more recent legislative proposals and enactments will receive special consideration. Decisions of courts and labor relations boards will be studied and discussed.

351. *LABOR UNION STRUCTURE, GOVERNMENT, AND ADMINISTRATION*. (U,G) 2 hours credit. M T W Th F 8.

A comprehensive review of the structure, government, and administrative problems of American labor unions as evidenced in the local union, joint boards, city



centrals, state federations, internationals, and the national AFL and CIO. Detailed examination is made of labor union membership qualifications and rules, justice machinery, finances and dues, the labor press, research, education, public relations, political action, benefits and insurance, and co-operative ventures of unions. Emphasis is placed upon the relationship between the internal operation of unions and their collective bargaining activities. Each student is expected to make an intensive study of the administrative organization and operation of one international union.

360. *PERSONNEL ADMINISTRATION SEMINAR*. (U,G) 3 hours credit. M T W Th F 11-12:30. Professor BROOKS.

Consideration will be given to case studies and practical problems of Personnel Administration, including recruitment, selection, placement, training, compensation, rating, transfer, promotion, separation, disciplinary actions, grievances, employee health and safety, employee services, and retirement plans. Outside specialists and representatives of various companies will be invited to present case materials and to lead discussions. Field trips will be made to near-by industries.

392. *AUDIO-VISUAL METHODS*. (U,G) 2 hours credit. M T W Th F 9 or 11. Assistant Professor JEHRING.

A discussion of the effectiveness of audio-visual methods as a means of communication. Training in the preparation and proper use of audio-visual materials and the methods of operation of various kinds of audio-visual devices. Stress is placed on the contributions of audio-visual methods to the solution of problems of mass communication.

394. *CONFERENCE METHODS IN INDUSTRIAL AND LABOR RELATIONS*. (U,G) 2 hours credit. M T W Th F 10. Assistant Professor ARNOLD.

A study of the principles and procedures of expository speaking and of group decision making; oral reports, informal exposition, committee deliberation, case conference discussion, committee hearings, production conferences, and the dissemination of information through group discussion. Lectures and class practice.

470. *SOCIAL SECURITY*. (U,G) 2 hours credit. M T W Th F 10. Professor McCONNELL.

A historical and analytical study of the philosophy, legislative history, administration, and economic and social effects of social security programs as protection against the risks of industrial accident, temporary and permanent disability, illness, old age, and unemployment. Proposals for modifying or extending American social security legislation will be critically examined. Attention will also be given to private and voluntary efforts to provide security, with special emphasis upon the problems of integrating public and private programs.

490. *PUBLIC RELATIONS*. (U,G) 2 hours credit. M T W Th F 9. Assistant Professor HYATT.

An analysis of the major types of public relations activities of industrial and labor organizations with emphasis on a critical appraisal of policies and methods for the effective presentation of their position to their own memberships, to government agencies, and to the public. Each student will prepare a case study in public relations on a particular question for an industrial or labor organization.

699. *SPECIAL STUDIES IN INDUSTRIAL AND LABOR RELATIONS*. (G).  
Directed research in special problems.

#### INDUSTRIAL AND LABOR RELATIONS SUMMER INSTITUTES

In addition to the regular summer courses, the School of Industrial and Labor Relations will sponsor several institutes, varying in length from two days to two

weeks. Detailed information regarding these institutes will be available by March 15 and may be obtained by writing the School of Industrial and Labor Relations, Cornell University.

The fourth annual Conference of Plant Training Directors is to be held in July. The primary purpose of this conference is to provide directors of training in New York State and others with policy formation responsibilities in industrial training an opportunity to exchange experiences on current problems in this field.

In co-operation with the American Hospital Association, the School is again conducting a workshop on supervisory training in human relations. This conference will meet from July 10 through 14. The purpose of the meeting is to bring together hospital administrators and department heads to discuss methods of evaluating the results of staff development and supervisory training. Staff members of the School and representatives from hospitals will conduct the conferences.

Other institutes being planned for the summer include a conference on union public relations and another on community relations. Plans are being made for a three-day conference in the field of industrial safety and another in audio-visual methods in training and communications.

During the summer session the School will conduct a conference on the human aspects of supervision. The purpose of this conference will be to present materials which have been used successfully in training executives and supervisors and to provide practice for the development of conference leaders. Special conferences for union officials and for wage and salary administrators are under consideration.

## HOME ECONOMICS

### CHILD DEVELOPMENT AND FAMILY RELATIONSHIPS

The Nursery School laboratory will operate with one group of children during the morning hours to provide observation facilities for department courses. The age range will be two and a half to four years, and the number of children will be limited to twelve.

†310 *PRINCIPLES FOR CHILD GUIDANCE*. (G; U by permission) 2 hours credit. No prerequisite, but a basic course in child psychology is desirable. M T W Th F 8. Nursery School observations, three hours a week, to be arranged with the instructor during registration. Professor WARING.

The behavior of young children and the influence of adults upon their learnings will be observed and studied as a basis for developing principles of guidance. Observations, to include typical activities, will be scheduled at different hours of the day. Fee, \$5.

†317. *SOCIAL AND EMOTIONAL DEVELOPMENT OF THE CHILD*. (U,G) 2 hours credit. M T W Th F 10. Professor DALTON.

Understanding the psychological growth and development of the child from birth through adolescence. Emphasis will be placed upon social and emotional development. The place of maturation in growth will be briefly considered. Fee, \$2.

†351. *CHILDREN'S LITERATURE*. (U,G) 2 hours credit. M T W Th F 9. Associate Professor REEVES.

Literature as a resource in children's living. The relation of children's literature to world literature. Traditional and modern forms. Illustration in children's books. Reading interests of children two to twelve. Fee, \$5.

†352. *WORKSHOP IN WRITING FOR YOUNG CHILDREN*. (U,G) 2 hours credit. T Th 2-4:30. Associate Professor REEVES.

The purpose of this course is not to turn out professional writers but to explore

the world of the young child through the creative activity of writing for him. Round-table discussions of form, content, style, and problems of presentation in children's literature; evaluation of selected books and stories; reading of manuscripts; writing. Permission of the instructor required. Fee, \$5.

†360. *PSYCHODYNAMICS OF HUMAN BEHAVIOR*. (U,G) 2 hours credit. M T W Th F 9. Professor DALTON.

A study of the motivating forces in human behavior. Both conscious and unconscious processes directing behavior will be considered. Special attention will be given to the teacher's task of dealing with personality problems of pupils. Fee, \$2.

†381. *THE TEACHER AS COUNSELOR*. (G; U by permission) 2 hours credit. M W 2-4:30. Mr. FELDMAN.

A survey will be made of those theories and methods which are most applicable to the teacher's role as both individual and group counselor. Teaching methods will include lectures, discussions, readings, films, case illustrations, and demonstrations. Fee, \$2.

407. *THESIS AND RESEARCH IN CHILD DEVELOPMENT AND FAMILY RELATIONSHIPS*. (G) 1 to 6 hours credit. Registration by permission of the instructors; hours by arrangement. Professor WARING and Mr. FELDMAN.

†461. *FAMILY RELATIONSHIPS AND THE PSYCHODYNAMICS OF FAMILY DEVELOPMENT*. (G; U by permission) 3 hours credit. M T W Th F 11. Professor ROCKWOOD.

A study of the family in American society. Topics considered are: Intracultural and individual variations in family patterns; the psychodynamics of family interaction throughout the cycle of family life; interruptions to the cycle of family development; crises in family life; strengthening family life. Fee, \$2.

†475. *FAMILY LIFE EDUCATION IN COLLEGES AND HIGH SCHOOLS*. (G) 3 hours credit. Registration with permission of the instructor. T Th 2-4:30. Professor ROCKWOOD.

The sources and history of family life education in the United States; philosophy and emphasis in present-day programs; practical problems related to the planning and conduct of family life education programs at the secondary and college levels. Fee, \$2.

#### ECONOMICS OF THE HOUSEHOLD AND HOUSEHOLD MANAGEMENT

†310. *MANAGEMENT IN FAMILY LIVING*. (G) 2 hours credit. Discussion, group projects, and field trips, T Th 2-5. Assistant Professor COUSENS and Miss VOORHIS.

A study of the ways in which different families manage with their available resources to attain their purposes. An opportunity to work with family members in their homes on a solution of some of their management problems. Simplification of work as one means of managing. Demonstrations, motion pictures, slides, photographs, and work centers set up in the laboratory. Opportunity for preparing illustrative material. One all-day tour, time to be arranged. Fee, \$6.

†320. *HOUSEHOLD EQUIPMENT AS IT RELATES TO HOME MANAGEMENT*. (G) 2 hours credit. Discussion, laboratory, and field trips, M W F 2-4. Associate Professor WILLIAMSON and Miss VOORHIS.

The management involved in selection, use, care, and repair of household equipment for home and school. Variation in design and quality in relation to the individual situation. Trips to homes where certain equipment is being used and to stores offering a variety of appliances. Discussions with homemakers, service men, and distributors. Fee, \$3.

403. *SPECIAL PROBLEMS IN ECONOMICS OF THE HOUSEHOLD AND HOUSEHOLD MANAGEMENT.* (G) Credit and hours to be arranged. Registration by permission. STAFF of the Department.

For graduate students recommended by their chairmen and approved by the head of the department and the instructor in charge for independent, advanced work.

407. *THESIS AND RESEARCH IN ECONOMICS OF THE HOUSEHOLD AND HOUSEHOLD MANAGEMENT.* (G) Registration with permission of the instructor. Credit and hours to be arranged. Associate Professors ROLLINS and WILLIAMSON.

†420. *HOME PROCESSES.* (G) 2 hours credit. M T Th F 9-11. Miss PURCHASE and Miss VOORHIS.

Application of chemistry, physics, and body mechanics to processes and equipment in the home. Nature of materials and characteristics of supplies used for their protection or cleaning. Suitability of various methods, supplies, and equipment for given processes, such as care of the house and laundering. Considerations in choosing between home production and commercial services. Fee, \$3.

†430. *ECONOMIC CONDITIONS IN RELATION TO THE WELFARE OF FAMILIES.* (G) 2 hours credit. M T W Th F 12. Associate Professor ROLLINS.

The relationship between the economic welfare of families and the total amount of goods and services produced, the distribution of income, and the general level of prices. Influence of such institutions as specialization, industrialization, money, marketing, and taxation. The interrelationship between outside economic conditions and the home. Fee, \$1.

*Note:* During a five-year period, it is planned to offer 310 and 430 each year, and every second or third year a selection from the following courses: 320, 330, 420, and EH 260 and EH 499, as described in the *Announcement of the College of Home Economics* for the academic year.

## FOOD AND NUTRITION

†260. *MEAL PLANNING WITH EMPHASIS ON RECENT FINDINGS IN FOOD AND NUTRITION.* (U,G) 2 hours credit. Prerequisite, course in nutrition and food preparation satisfactory to the instructor. Lectures M F 10. Laboratories, T W Th 10-12:20. Professor FENTON.

Consideration is given to problems involved in the selection of food and the planning, preparation, and serving of family meals. Problems related to current food prices and the world food supply are emphasized; also the organization and management of time and energy. Laboratory fee, \$16.

†305. *TECHNIQUES AND PRINCIPLES OF DEMONSTRATION.* (U,G) 2 hours credit. Discussions and laboratories, M T W Th F 11-1. Associate Professor BRIANT.

A course emphasizing the purposes and techniques of demonstrations in food preparation and nutrition as used in teaching, extension, business, and social service. Each student is expected to prepare and give several demonstrations. Text: Allgood, *Demonstration Techniques*. Laboratory fee, \$12.

†311. *SCIENCE RELATED TO FOOD.* (U,G) 2 hours credit. Prerequisites, courses in chemistry and in food preparation satisfactory to the instructor. Lectures, T Th F 2. Laboratories, M W 2-4:20. Professor FENTON.

The properties of true solutions of importance in cookery, such as freezing point, boiling point, pH, buffering effect, and flavor; crystallization from solution; the effect of pressure on boiling point; physical and chemical properties of fats; pigmentation of vegetables; palatability and the subjective scoring of the palatability of foods.

Laboratory work will include the preparation of beverages, fruit ices, sherbets, ice

creams, fondantlike candies, fruits, vegetables, pastry, pies, and foods fried in deep fat. The effects of variation in manipulation, ingredients, and cooking conditions will be studied. Text: Lowe, *Experimental Cookery* (third edition). Laboratory fee, \$10.

(Courses 311, 312, and 313 will be offered in consecutive years. These three courses make a six-hour unit in Science Related to Foods.)

†329. *RECENT FINDINGS IN NUTRITION*. (U,G) 2 hours credit. Prerequisite, a college course in nutrition and consent of the instructor. Lectures and discussion, M T W Th F 8. Professor HAUCK.

Planned for students who wish to bring their information about nutrition up-to-date. The topics studied will be those which are related to practical problems in human nutrition. Emphasis on proteins and minerals. Fee, \$2.

(Course 328, with emphasis on energy metabolism and vitamins will be offered in alternate years.)

†329U. *RECENT FINDINGS IN NUTRITION*. (U,G) 1 or 2 hours credit. Prerequisite, a college course in nutrition and consent of the instructor. Lectures and discussion M T W Th F 8. Professor HAUCK.

This course will be divided into two three-week units, the first unit from July 5 to 21 and the second unit from July 24 to August 12. A student may register for either or both units in Room 426, Martha Van Rensselaer Hall. One hour of credit will be given for each three-week unit.

See Course 329 above for full description. Fee, \$1 per unit.

†340. *FAMILY NUTRITION WITH SPECIAL EMPHASIS ON CHILD FEEDING*. (U,G) 2 hours credit. Prerequisite, general home economics background in food and nutrition. Lectures and discussion M T W Th F 9. Miss NEWMAN.

Presentation and discussion of current ideas on feeding children and their families. Relation of nutrition to physical growth and development. Fee, \$1.

†402. *READINGS IN NUTRITION*. (G) 2 hours credit. Registration by permission of the instructor. Students are expected to have some background in physiology, organic chemistry or biochemistry, and nutrition. Discussions, M T W Th F 10. Professor HAUCK.

A critical review of current literature, emphasizing the experimental data on which the principles of human nutrition are based. Students participate in the choice of subjects for study. Fee, \$2.

†402U. *READINGS IN NUTRITION*. (G) 1 or 2 credit hours. Registration by permission of the instructor. Students are expected to have some background in physiology, organic chemistry or biochemistry, and nutrition. Discussions, M T W Th F 10. Professor HAUCK.

This course will be divided into two three-week units, the first unit from July 5 to 21 and the second unit from July 24 to August 12. A student may register for either or both units in Room 301, Martha Van Rensselaer Hall. One hour of credit will be given for each three-week unit.

See Course 402 above for full description. Fee, \$1 per unit.

403. *SPECIAL PROBLEMS IN FOOD AND NUTRITION*. (G) Credit and hours to be arranged. Registration with permission of the instructor. Associate Professor BRIANT and STAFF of the Department.

For graduate students recommended by their chairmen and approved by the head of the department and the instructor in charge for independent, advanced work.

407. *THESIS AND RESEARCH IN FOOD AND NUTRITION*. (G) Credit and hours to be arranged. Registration with permission of the instructor. Associate Professor BRIANT and STAFF of the Department.

## HOUSING AND DESIGN

†310. *STUDY OF ROOMS, SELECTION AND ARRANGEMENT OF FURNISHINGS.* (U,G) 2 hours credit. No prerequisite, but previous study of color and design is desirable. M T W Th F 10-12. Associate Professor WILKERSON.

Functional arrangement and design of furnishings. The selection and arrangement of furnishings in relation to family needs; the relation of furnishings to the architectural features of rooms. Fee, \$10.

†320. *HISTORIC FURNITURE AND INTERIOR DESIGN.* (U,G) 2 hours credit. Prerequisite 220 or consent of the instructor. M T W Th F 2. Associate Professor WILKERSON.

A course concerned with the developments of furniture and interior design from early forms through the major historic periods, showing recurrence of structural forms adapted and modified and reflecting economic, political, and social aspects of the periods. Fee, \$10.

†340. *HOUSE PLANNING.* (U,G) 2 hours credit. M W F 8-11 or 2-5. Assistant Professor BAIRD.

Introductory course in home planning, incorporating house, landscape, and neighborhood; drafting, lectures, local trips, outside reading; design problems in space arrangement and construction; discussion of construction methods and prefabrication. Fee, \$10.

†346. *FUNDAMENTALS OF HOUSING.* (U,G) 2 hours credit. No prerequisite. M T W Th F 9. Associate Professor MONTGOMERY.

An introductory course in housing: inventory, needs, planning, design, construction, costs and finance, social and physical environments, current trends, and research in relation to the family to be housed. Fee, \$10.

400. *SEMINAR IN HOUSING.* (G) 2 hours credit. Registration by consent of professor. T Th 11-1. Associate Professor MONTGOMERY.

Selection of certain aspects of housing will allow students to do concentrated work on specific topics.

## INSTITUTION MANAGEMENT

†220. *FOOD SELECTION AND PURCHASE.* (U,G) 2 hours credit. Prerequisite, elementary course in nutrition, food preparation, and meal planning. Lecture and discussion, M W F 9-11. Miss MOORE.

A discussion of sources, bases of selection, methods of purchase, and care of various classes of food. Planned for homemaking teachers, dietitians, and others who have responsibility for purchasing food. Principal text: West and Wood, *Food Service in Institutions*. One out-of-town field trip will be scheduled. Estimated cost of trip, \$5. Fee, \$2.

†310. *ADVANCED QUANTITY FOOD PREPARATION AND CATERING.* (U,G) 3 hours credit. Prerequisites, elementary courses in nutrition, food preparation, and meal planning, and in quantity food preparation. Permission of the instructor required. Lecture, discussion, and laboratory M W 11-1 and T Th 9-2. Special catering assignments require 12 additional hours. Assistant Professor RIPLEY and Miss KNICKREHM.

Practice in organizing work, making menus, calculating costs, preparing food for luncheons and other catering projects as assigned. White uniform and hairnets are required. Fee, \$10.

†340. *SELECTION AND CARE OF FOOD SERVICE EQUIPMENT.* (G) 1 hour credit. Offered as a three-week unit course July 4-22. Prerequisite, a course in quantity cookery. Lecture and discussion M W F 2-4:30. Professor HARRIS.



A discussion of the bases of selection of major items of food service equipment including specifications, installation considerations, operation, care, maintenance materials, and upkeep. Principal text: *Care of Food Service Equipment*. An out-of-town field trip will be scheduled; approximate cost, \$5. Fee, \$1.

†370. *FOOD COST CONTROL*. (G) 1 hour credit. Offered as a three-week unit course July 25–August 12. Prerequisite, an elementary accounting course or equivalent experience. Lecture, discussion, and laboratory M W F 2–4:30. Associate Professor CLADEL.

A study of food control procedures applicable to small or moderate-size food service operations including the hospital dietary department. Some time will be given to the interpretation of financial statements. Fee, \$1.

403. *SPECIAL PROBLEMS IN INSTITUTION MANAGEMENT*. (G) Credit and hours to be arranged. Registration by permission of Professor HARRIS.

For graduate students recommended by their chairman and approved by the department head and the instructor in charge for independent, advanced work. Cost of materials determined by the problem.

407. *THESIS AND RESEARCH IN INSTITUTION MANAGEMENT*. (G) Credit and hours to be arranged. Registration by permission of Professor HARRIS.

For graduate students, majoring in the department, who are completing their theses. Cost of materials determined by the research being undertaken.

### TEXTILES AND CLOTHING

†120. *TECHNIQUES CONCERNED WITH PERSONAL APPEARANCE, CARE AND RENOVATION OF CLOTHING*. (U,G) 2 hours credit. 210 is recommended as a parallel course. M T W Th 7:30–10 a.m. Associate Professor BUTT.

The course will consist of demonstrations, discussions, and practice in grooming techniques in relation to total individual appearance. Evaluation of the subject matter available in this area. Making of types of cosmetics and other grooming aids. A study of processes and equipment involved in care and renovation of clothing. Fee, \$5.

†130. *TEXTILES: CLOTHING FABRICS*. (U,G) 2 hours credit. M T W Th F 7:30–9:30 a.m. Miss WHITE.

A study of textile fibers and their identification through laboratory tests; technical information and laboratory practice to develop good buying habits and to encourage proper use and care of fabrics and clothing; consideration of some of the factors involved in the production and consumption of textiles; the study of clothing fabrics in the present-day market as a means of developing aesthetic appreciation of quality and design. Estimated cost of materials, \$3. Fee, \$5.

†200B. *DRAPING, FITTING, AND CONSTRUCTION*. (G; U by permission) 2 hours credit. Prerequisite, professional experience or course work in the area of clothing design and construction acceptable to the instructor. M T W Th F 2–4. Associate Professor STALEY.

Laboratory problems will include practice in developing original designs through draping; and the draping of two garments, one of which is carried through to completion. Materials to be provided by the students at an estimated cost of \$15 to \$25. Fee, \$5.

†210. *DRESS SELECTION AND DESIGN*. (G; U by permission) 2 hours credit. Course 120 is recommended as a parallel course. M T W Th F 2–4. Miss COLTON.

A course planned to give opportunity for creative experience and to help develop appreciation of fine design and skill in achieving beauty of costume in relation to the wearer.



Laboratory practice includes the study of design problems from points of view of age, coloring, figure, and expression of individuality; experimentation with fabric combinations; color analysis; experience in the use of course material as inspiration for designing and restyling clothes; other problems adapted to the needs and interests of the students. Materials to be provided by the student. Estimated cost of materials, \$5. Fee, \$5.

†225. *DRESSMAKER TAILORING*. (G; U by permission) 2 hours credit. Registration limited to 16 students. Prerequisite, accredited college courses in elementary and advanced dressmaking acceptable to the instructor. M T W Th F 9-11. Associate Professor STALEY.

A course planned for the teacher or student with understanding and skill in general dressmaking. Through making a wool suit or coat, experience is provided for developing good technique in tailoring women's garments of fabrics suitable for dressmaker designs. Materials to be provided by the students at an estimated cost of \$20 to \$30. Fee, \$5.

†30B. *HISTORY OF COSTUME*. (G; U by permission) 2 hours credit. M T W Th F 8. Associate Professor McMURRY.

A course aimed to give opportunity for the development of appreciation of costume as an expression of the life of the people and historic costume as a basis for designing stage and modern civil costume.

The course is conducted through lectures, reference reading, and discussion, and the development of a special problem selected by the student to meet individual needs. Excellent costume collections and rare reference books are made available. Estimated cost of materials, \$5 to \$10. Fee, \$5.

†350. *TEXTILES: ADVANCED COURSE*. (G) 2 hours credit. Prerequisite, Textiles and Clothing 130 or the equivalent. Consult instructor before registering. M T W Th F 10-12. Miss WHITE.

A study of textiles with emphasis on physical properties of fiber, yarn, and fabric as they affect satisfactions to be obtained by the consumer. Sources of textile information. Practice in the use of laboratory equipment and instruments. Standard procedures are used where possible. Development of a special problem by the student to meet individual interests. Estimated cost of materials, \$5 to \$15. Fee, \$5.

†430. *READINGS CONCERNING CLOTHING AS RELATED TO HUMAN BEHAVIOR*. (G) 2 hours credit. Registration limited to 15 students. M T W Th F 9. Assistant Professor RYAN.

Readings and discussion of research and articles in scientific and professional journals on such topics as: motives in choosing clothing; the effect of clothing on behavior in various age groups; the appreciation of beauty; and the acceptance of fashion by the group. Fee, \$2.

## HOTEL ADMINISTRATION

In 1922 Cornell University established, with the co-operation and financial assistance of the American Hotel Association, a four-year course in Hotel Administration for high school graduates desiring to enter the administrative departments of the hotel business. Many hotel proprietors and managers, who have been unable to take a four-year university course, have asked for shorter courses with less formal entrance requirements.

To meet this demand, much of the Summer Session work in Hotel Administration is given in unit courses, one to three weeks in length. A circular giving full details of these courses has been issued and will be sent upon request. For this circular, for

other information about the work in this department, and for admission to these courses, address Professor H. B. Meek, Martha Van Rensselaer Hall, Cornell University, Ithaca, N. Y.

## AGRICULTURE

### AGRICULTURAL ECONOMICS

†4. *RURAL ECONOMICS*. (U,G) 2 hours credit. Lectures M T W Th 11. Field trips or discussion periods W 2-5. Professor VAUGHAN.

This course is designed to give persons who have not had formal training in agricultural economics, but who plan to work in rural areas, a general knowledge of the economic aspects of farming and rural life. Emphasis will be placed on farming as a business, types of farms, economic differences in land, factors affecting farming returns, and the marketing of farm products. Attention will also be given to the function of agricultural cooperatives, economic and social agencies serving rural communities, and the development of public policies relating to agriculture and rural areas. Field trips will be taken to near-by rural areas during some of the afternoon periods. Approximate cost for transportation, \$5. Fee for materials, \$2.

†102. *FARM MANAGEMENT*. (U,G) 2 hours credit. Lectures M T W Th 9. Field trips or discussion periods Th 2-5. Professor VAUGHAN.

Factors affecting farm incomes; analysis of the farm business; planning the organization and management of specific farms; efficient farm operation with special attention to work simplification and labor management. Field trips will be taken to near-by farms during some of the afternoon periods. Approximate cost for transportation, \$5. Fee for materials, \$2.

†115. *PRICES*. (U,G) 2 hours credit. Lectures M T W Th F 8. Professor RAEBURN.

Primary emphasis will be on the functions of pricing mechanisms in determining production, distribution, and consumption. Price analysis will be applied to the principal products of agriculture and to the goods and services bought by farmers and their families. Attention will also be given to the causes and effects of instabilities of general price and wage levels, and to the economic relations between the agricultural and industrial sectors of national economies. Fee for materials, \$2.

†126. *FARMERS' COOPERATIVES*. (U,G) 2 hours credit. Lectures M T W Th F 9. One or more field trips will be taken during the latter part of the course on Tuesday afternoons. Professor HEDLUND.

What cooperatives are, what they have tried to do, and what they have done; their special problems of organization, finance, and control. Approximate cost for transportation, \$5. Fee for materials, \$2.

†141. *MARKETING FARM PRODUCTS*. (U,G) 2 hours credit. Lectures M T W Th F 11. One or more field trips will be taken during the latter part of the course on Tuesday afternoons. Professor HEDLUND.

Development of agricultural marketing; characteristics of demand; peculiarities of agricultural supply; and the costs, functions, and services involved in the marketing of farm products. Approximate cost for transportation, \$5. Fee for materials, \$2.

†151. *AGRICULTURAL AND FOOD PROBLEMS AND POLICIES*. (U,G) 2 hours credit. Lectures M T W Th F 10. Professor RAEBURN.

This course is designed as a systematic review of economic and social problems in agricultural production and marketing in the United States and Western Europe. Particular attention will be given to the adaptations of production and trade in changing economic conditions, and to the objectives and results of the policies of governments, prewar, wartime and postwar. The problems of underdeveloped agricultural economics in tropical areas will also be discussed. Fee for materials, \$2.

## AGRICULTURAL ENGINEERING

†103. *FIELD MACHINERY*. (U,G) 3 hours credit. Prerequisite, Course 1 or Physics. Lectures M T W Th F 11. Laboratory: Sec. 1, M W 1-4; Sec. 2, T Th 1-4. Limited to 16 per section. Professor JENNINGS.

A study of the use, care, operation, adjustment, and repair of farm field machinery, such as tillage tools, seeders, harvesting equipment and sprayers. The selection of the size and type of equipment best adapted for a specified size of farm is considered. Laboratory fee, \$3.

†141. *GENERAL SHOP WORK FOR RURAL HIGH SCHOOL TEACHERS*. (U,G) 3 hours credit. Lectures M T W Th F 10. Laboratory: Sec. 1, M F 1-4; Sec. 2, T Th 1-4. Limited to 16 per section. Professor FOSS.

A course for teachers of Agriculture and General Shop Work in rural high schools. Methods of teaching Shop. Objectives, curriculum construction, shop organization, and management are included in the lecture periods. The laboratory periods are used to develop skills and teaching techniques in woodworking, tool fitting, hot and cold metal working, sheet metal, painting and general construction and repair work common to the farm. Laboratory fee, \$5.

†42. *WELDING*. (U,G) 1 hour credit. Two laboratory periods: Sec. 1, M W 9-12; Sec. 2, M W 1-4. Limited to 16 per section. Mr. CLOUGH.

A course giving fundamentals and practice of oxyacetylene welding and cutting of metals; spot welding and arc welding with special emphasis on farm shop construction and repair. Laboratory fee, \$5.

†43. *ADVANCED WELDING AND METAL SHOP*. (U,G) 1 hour credit. Two three-hour laboratory periods to be arranged. Permission of instructor required. Mr. CLOUGH.

This course provides the student with an opportunity to extend his knowledge and skills in welding operations and also acquaints him with the use and operation of essential machine shop tools such as drills, lathes, metal saws, and grinders as commonly found in Vocational-Agriculture and farm shops. Laboratory fee, \$5.

## BIOLOGICAL AND NATURAL SCIENCES

## BACTERIOLOGY

†1. *GENERAL BACTERIOLOGY*. (U,G) 2 or 4 hours credit. Lectures M T W Th F 1:40; laboratory M T W Th F 2:30-4:30. Professor STARK and Mr. VAN DEMARK.

An introductory course giving a general survey of the field of bacteriology, together with the fundamentals essential to further work in the subject. The morphology, physiology, and classification of bacteria; the culture of microorganisms, simple and differential staining, and general bacteriological technique; the bacteriology of soil, air, water, sewage, milk, and foods; the principles of immunity and the microbiology of disease. Laboratory fee, \$10, for those seeking four credit hours.

220. *SPECIAL PROBLEMS IN BACTERIOLOGY*. (G) Credit and hours by arrangement. Professors SHERMAN and STARK.

Special problems in bacteriology may be elected by qualified students with the permission of the instructors. This course is open to students who are taking course 1, or to graduate students who have completed at least one year of graduate work in Cornell University.

## BIOCHEMISTRY

*Note:* See also Nutrition.

101. *GENERAL BIOCHEMISTRY*. (U,G) 4 hours credit. Prerequisite, Quantitative Analysis and Organic Chemistry. Lectures, M T W Th F 8-10. Professor WILLIAMS.

†102. *GENERAL BIOCHEMISTRY*. (U,G) 2 hours credit. Prerequisite or parallel, Course 101. Laboratory, M T W Th F 10-12:30. Professor WILLIAMS and assistant.

Laboratory practice with plant and animal materials and the experimental study of their properties. Laboratory fee, \$15.

### BIOLOGY

†5. *LABORATORY METHODS IN BIOLOGY*. (U,G) 3 hours credit. Prerequisite, an introductory course in zoology or biology. Lectures and laboratory, M T W Th F 8-10:30, or by arrangement in the event of conflicts. Assistant Professor UHLER.

For students who intend to follow some phase of biology as a profession, or for teachers of biology who wish to prepare their own laboratory materials. Subjects included: collection, preservation, and storage of materials; preparation and staining of smears, whole mounts, and sectioned materials; preparation of bird and mammal skins for study; clearing and staining small vertebrates *in toto*; and the injection of blood vessels and embalming of specimens. Text: Miller & Blayde, *Methods and Materials for Teaching Biological Science*. Laboratory fee, \$7.50.

310. *SPECIAL PROBLEMS IN BIOLOGY*. (U,G) Credit and hours to be arranged. Assistant Professor UHLER.

This course may be elected by qualified persons with the permission of the instructor under whom the work is done. Laboratory fee: variable according to the nature of the problem.

### BOTANY

†1A. *GENERAL BOTANY—ANATOMY AND PHYSIOLOGY*. (U) 3 hours credit. Equivalent to Botany 1, first term. Lectures, M T W Th F 10; laboratory and conferences, M T W Th F 11-12:30. Professor PETRY and assistant.

The structure and life processes of the higher plants are examined in detail, with considerable attention to information necessary for more advanced or practical work with plants. Students taking this course may attend the field trips offered in connection with Botany 1B. Laboratory fee, \$3.50.

†1B. *GENERAL BOTANY—MORPHOLOGY AND TAXONOMY*. (U) 3 hours credit. Equivalent to Botany 1, second term. May be taken in conjunction with Botany 1A, or independently. Lectures, M T W Th F 2; laboratory, M T W Th F 3-4:30. Three half-day field trips on Saturdays to be arranged. Assistant Professor UHL.

Representatives of the principal groups of plants are studied with a view to acquainting the student with the plant kingdom as a whole. The principal families of ferns and flowering plants are examined and practice in identification is given. The field work is intended to afford to teachers and others first-hand knowledge of the commoner plants of all the great groups. Facilities for collecting plant materials for teaching or other purposes will be provided. Laboratory fee, \$3.50.

†31. *PLANT PHYSIOLOGY*. (U,G) 4 hours credit. Prerequisite, General Botany or Biology, and Elementary Chemistry. Lectures, M T W Th F 9; laboratory 10-12. Professor CLARK.

This course is designed to acquaint the student with the important life processes of plants. Topics such as water-relations, photosynthesis, translocation, digestion, respiration, mineral nutrition, and growth relations are studied in some detail, and particular emphasis is placed, both in laboratory and in classrooms, on discussion of the principles and their applications to living plants. Laboratory fee, \$5.

†117. *TAXONOMY OF VASCULAR PLANTS*. (U,G) 4 hours credit. Prerequisite, Botany 1 or its equivalent. Lectures, M T W Th F 10; laboratory M T W Th 11-12:30. Field trips, T Th 2-6. Professor CLAUSEN.

A survey of the families of ferns and seed plants, their gross morphology, geographical distribution, and economic importance, together with an introduction to the principles and literature of taxonomy. Students desiring further work in taxonomy in the Summer Session may enroll in Botany 171. Laboratory fee, \$6.

†171. *SPECIAL PROBLEMS IN TAXONOMY*. (U,G) Not less than 2 hours credit. By appointment. Professor CLAUSEN.

Students enrolled in this course will pursue special studies or carry on original research. Laboratory fee variable.

### CONSERVATION

1. *CONSERVATION OF WILDLIFE*. (U,G) 2 hours credit. Lectures M T W Th F 8. Assistant Professor HEWITT.

An introduction to the wildlife resources of North America; the importance of the flora and fauna in our economic and cultural life; the history of wildlife decimation, the present need for conservation, and the methods employed to re-establish the various species.

3. *CONSERVATION OF NATURAL RESOURCES*. (U,G) 2 hours credit. Lectures M T W Th F 11. Assistant Professor HEWITT.

The natural-resource problems of the United States; natural resources in national welfare; the conservation movement; public land policies; natural resources of major importance; use and exploitation; present inventories; problems of the immediate and long-range future; essential points in a national conservation program.

†8. *ELEMENTARY TAXONOMY AND NATURAL HISTORY OF VERTEBRATES*. (U,G) 4 hours credit. Prerequisite, general zoology or biology. Lectures M T W Th 1:40-2:30. Laboratory and field work, M T W Th 2:30-5:30. Professor HAMILTON.

Lectures on fish, amphibians, reptiles, and mammals, their habits, life histories, coloration, respiration, locomotion, reproduction, and adaptations; together with their classification, nomenclature, characters, and relationships. Laboratory study of the parts employed in the classification of these groups with special training on the identification of the vertebrates of eastern United States. Field work is partly to give practice in field observations and in ready identification of local vertebrates in their natural environment and partly to introduce some ecological methods. Laboratory fee, \$4.50.

†9. *ORNITHOLOGY*. (U) 3 hours credit. Lectures M W F 9. Laboratory M W 1:40-4:30, or M W F 10-12. Field trips T Th 5:30-8 a.m. Professor A. A. ALLEN and Dr. E. G. ALLEN.

An introduction to the study of birds and familiarity with the local species. The lectures cover classification, migration, coloration, song, nest building, eggs, care of young, methods of attracting birds, and their economic importance. The laboratory work with bird skins, nests, and eggs gives an intimate knowledge of the birds of eastern North America, their life histories and distribution, and familiarity with the use of manuals. The aim of the field work is the identification of birds by their songs and habits as well as by their plumage. Laboratory fee, \$3.

†25. *MAMMALOLOGY*. (U,G) 3 hours credit. Prerequisite, permission of instructor. Lectures M T W 8. Laboratory M T 9-12 and one other period by appointment. Professor HAMILTON.

Principal phases of mammalian life; origin, distribution, habits, and literature. Laboratory periods are devoted to methods of field collecting, census taking, life history studies, preparation of skins and skeletons, and identification of North American species. Laboratory fee, \$4.50.

†126. *ADVANCED ORNITHOLOGY*. (U,G) 3 hours credit. Prerequisite, Course 9 or its equivalent; with special permission may be taken with Course 9. Lectures, T Th 9. Laboratory T Th 1:40-4:30, and one other period by appointment. Professor A. A. ALLEN. Students desiring this course should write Professor Allen for reservations.

The structure and classification of the birds of the world; geographical distribution; the preparation of bird skins and bird photography. Laboratory fee, \$3.

128. *THE HISTORY AND LITERATURE OF ORNITHOLOGY*. (U,G) 1 hour credit. Lectures T Th 10. Dr. E. G. ALLEN.

An introduction to the evolution of ornithology in zoological science; the leading writers and bird artists from Aristotle to the present, together with the main sources and aids for the preparation of bibliographies.

400-405. *RESEARCH PROBLEMS*. (U,G) 1 to 3 hours credit. Prerequisite, adequate preparation and permission of instructor.

401. *HERPETOLOGY*. Professor HAMILTON.

403. *MAMMALOLOGY*. Professor HAMILTON.

404. *ORNITHOLOGY*. Professor ALLEN.

405. *WILDLIFE MANAGEMENT*. Assistant Professor HEWITT.

## ENTOMOLOGY

†12. *GENERAL ENTOMOLOGY*. (U,G) 3 hours credit. Prerequisite, a course in biology or general zoology. Lectures, M T W Th F 11. Laboratory, M W F 2-4:30. Assistant Professor PATE.

Lectures and demonstrations on the characteristics of the orders and families of insects, with the study of their habits, life histories, and relations to other plants and animals. Laboratory work on the structure, metamorphosis, classification, and identification of insects, with field trips to study and collect insects in their natural habitat, and preparation of a collection of local insects. Text: Matheson's *Entomology for Introductory Courses*. Equipment: insect net, insect pins and cases, labels, hand lens, all of which can be purchased in Ithaca. Laboratory fee, \$3.

302. *SPECIAL PROBLEMS IN ENTOMOLOGY*. (U,G) Credit and hours to be arranged. Assistant Professor PATE.

This course may be elected by qualified persons with the permission of the instructor under whom the work is done.

## FLORICULTURE AND ORNAMENTAL HORTICULTURE

Courses in this department are offered for three groups of people. Courses 12, 13, and 199 are of interest to amateurs. Courses 118, 119, and 199 are offered for practicing nurserymen, park and estate superintendents, landscape engineers, and architects. Courses 12, 13, 118, and 199 are given for advanced students in horticulture and landscape gardening.

†12. *HERBACEOUS PLANT MATERIALS*. (U,G) 3 hours credit for new students, 2 hours for those who have had Floriculture 12 in the spring term. Lectures, M T W Th 8; laboratory, W Th 1:40-4:30. Assistant Professor LEE.

A study of the ornamental herbaceous plants used in landscape and garden plantings. Emphasis is placed on the identification, uses, and culture of annuals and summer flowering perennials. All members of the class will participate in an all-day excursion to visit private estates and public parks in Rochester. Transportation fee, \$5; laboratory fee, \$2.

†13. *WOODY PLANT MATERIALS FOR LANDSCAPE PLANTING*. (U,G) 4 hours credit. Lectures, M T W Th 9; laboratory and field work, M T W Th 10-12:30. Assistant Professor CORNMAN.

A study of the characteristics and requirements of trees, shrubs, and vines for landscape planting. The laboratories and field trips enable the student to recognize common woody plants. The lectures include such subjects as planting areas, planting practices, and plant materials and aim to give the student an appreciation of plants not only as growing things but as possible units in landscape design. All members of the class will participate in an all-day excursion to visit private estates and public parks in Rochester. Transportation fee, \$5; laboratory fee, \$3.

†118. *LANDSCAPE CONSTRUCTION*. (U,G) 4 hours credit. Prerequisite, some knowledge of mechanical drawing and either practical experience or elementary training in landscape design. Lectures, T 7-9:30 p.m.; laboratory W Th F 8-12 and 1-5. Associate Professor PORTER.

A course covering the construction problems of the service departments of nursery landscape firms, landscape contractors, greens keepers, and park superintendents. A study of the materials used in landscape construction, the design and drafting of details, costs, and estimates; with actual practice in and supervision of a variety of problems such as grading, earthwork, walls, terraces, steps, pools, and the like. Laboratory fee, \$8.

†119. *GARDEN PLANTING AND MAINTENANCE*. (U,G) 3 hours credit. Prerequisite, elementary courses in Botany, Plant Physiology, and Ornamental Horticulture. Lectures, M Th F 7-9 p.m.; laboratory, M T 1:40-4. Associate Professor PRIDHAM.

The growing, transplanting, and maintenance of garden flowers, trees, and shrubs. Special consideration is given to the application of basic science to modern garden practice, propagation, soil and fertilizers, transplanting, watering, weed control, and pruning. Consideration is also given to special plant materials for specific locations and purposes. Trips will be made to private estate and park plantings. Transportation fee, \$3; laboratory fee, \$3.

199. *SPECIAL PROBLEMS IN HORTICULTURE*. (U,G) credit and hours to be arranged. Associate Professor PORTER and members of the STAFF.

Special problems related to the fields of horticulture and landscape planning and planting may be elected by qualified persons with permission of the instructor. Cost of materials dependent upon the nature of the problem.

## GENETICS

†101. *GENERAL GENETICS*. (U,G) 4 hours credit. Prerequisite, a course in botany, zoology, or biology. Lectures, M T W Th F 10; laboratory, daily except Saturday 11-12:30. Associate Professor NOVITSKI.

A general study of the fundamental principles of genetics. Discussion of simple cases of inheritance, gene interaction, gene linkage, inheritance of quantitative characters, inheritance of sex, effects of inbreeding and crossing, the origin of heritable variation, gene action, and the relation of genetical principles of eugenics. Laboratory studies of hybrid material in plants and animals and breeding experiments with *Drosophila*. Laboratory fee, \$3.



## NUTRITION

†111. *LABORATORY WORK IN NUTRITION*. (U,G) 3 hours credit. Prerequisite, a course in quantitative analysis. M T W Th F 1-4. Professor McCAY and Mr. PINKOS.

This course is for seniors and graduate students as described in the *Announcement of the Graduate School*. It is designed to familiarize the student with the application of chemical methods to the solution of problems in nutrition. The techniques of research with common laboratory animals such as white rats, hamsters, dogs, rabbits, and guinea pigs is taught by having the student participate in a series of short research problems such as testing the nutritive value of improved breads. Laboratory fee, \$15.

215. *HISTORY OF NUTRITION*. (U,G) 1 hour credit. T Th 4:15. Professor McCAY.

This course is designed to teach the student how to use the nutrition literature in order to strengthen his background and keep abreast of modern research and its application.

## ZOOLOGY

*Note:* See also Conservation.

Zoology Courses 103 and 104 are so designed that a student may take either or both.

†103. *AN INTRODUCTION TO THE INVERTEBRATES*. (U) 3 hours credit. Recitations, M T W Th F 9; laboratory, M W and 1st, 3d, and 5th F 1:40-4. Associate Professor LEONARD and assistant.

The structure and function of representative animals lacking backbones; their classification, life cycles, habits; their relation to the welfare of man; certain biological principles. Laboratory fee, \$5.

†104. *AN INTRODUCTION TO THE VERTEBRATES*. (U) 3 hours credit. Recitations, M T W Th F 11; laboratory, T Th and 2d, 4th, and 6th F 1:40-4. Associate Professor LEONARD and assistant.

The structure and function of the vertebrate organ systems; the principles of development, genetics, and evolution. Comparisons of frog and man will be stressed. Laboratory fee, \$5.

†211-212. *COMPARATIVE ANATOMY OF THE VERTEBRATES*. (U,G) 6 hours credit. Prerequisite, Zoology 101-102 or 103-104 or their equivalent. Lecture, M T W Th F 10; laboratory, M T W Th F 1-5. Associate Professor GILBERT and assistant.

A thorough study and dissection of representative vertebrate types, including a fish, amphibian, reptile, bird, and mammal, together with demonstrations on species other than the types dissected.

The course is intended to give students an evolutionary background for the study and appreciation of the structure of higher vertebrates, including man. Laboratory fee, \$20.

## PHYSICAL AND MATHEMATICAL SCIENCES

## CHEMISTRY

†105-106. *GENERAL CHEMISTRY*. (U) 6 hours credit. Lectures and recitations, M T W Th F 8-10. Laboratory, M T W Th F 10-1. Dr. SIENKO and assistant.

For those students who intend to take more chemistry, this course serves as a prerequisite to the more advanced courses in chemistry. Secondary school chemistry

is not a prerequisite. The course may be elected by students who do not intend to take more chemistry.

Emphasis on the more important chemical principles and facts, on the scientific method, and on the relation of chemistry to the other fields of knowledge and to everyday life. Laboratory fee, \$10.

†201. *INTRODUCTORY QUALITATIVE ANALYSIS* (short course) (U,G) 3 hours credit. Prerequisite, General Chemistry. Lectures, M T W Th F 8; laboratory, three hours daily except Saturday between 9 and 1. Dr. SCHERAGA and assistant.

A study of the properties and reactions of the common elements and acid radicals, and their detection in various solutions. Laboratory fee, \$15.

205. *INTRODUCTORY QUALITATIVE ANALYSIS*. (U,G) 3 hours credit. Prerequisite, General Chemistry. Chemistry 207 must be taken with 205. Lectures, M T W Th F 8; recitations, T Th 12. Dr. SCHERAGA.

A study of the application of the theories of general chemistry to the systematic separation and detection of the common elements and acid radicals.

†207. *INTRODUCTORY QUALITATIVE LABORATORY*. (U,G) 3 hours credit. Prerequisite, General Chemistry. Must be taken with Chemistry 205. Laboratory, M W F 9-1 and T Th 9-12. Dr. SCHERAGA and assistant.

A study of the properties and reactions of the common elements and acid radicals, and their detection in various solutions. Laboratory fee, \$15.

†215. *INTRODUCTORY QUANTITATIVE ANALYSIS* (short course) (U,G) 4 hours credit. Prerequisite, Chemistry 201 or 205 and 207. Lectures, M T W Th F 8; laboratory, three hours daily except Saturday between 9 and 1. Professor NICHOLS and assistant.

A study of the fundamental principles of gravimetric and volumetric analysis, and the analysis of various substances by these methods. Laboratory fee, \$15.

220. *INTRODUCTORY QUANTITATIVE ANALYSIS*. (U,G) 3 hours credit. Prerequisite, Chemistry 201 or 205 and 207. Chemistry 222 must be taken with 220. Lectures, M T W Th F 8; recitations, T Th 9. Professor NICHOLS.

A study of the fundamental principles of gravimetric and volumetric analysis with practice in stoichiometry.

†222. *INTRODUCTORY QUANTITATIVE LABORATORY*. (U,G) 3 hours credit. Prerequisite, Chemistry 201 or 205 and 207. Must be taken with Chemistry 220. Laboratory, M W F 9-1 and T Th 10-1. Professor NICHOLS and assistant.

Laboratory practice in the preparation and standardization of various volumetric solutions and the analysis of a variety of substances by volumetric and gravimetric methods. Laboratory fee, \$15.

303. *ELEMENTARY ORGANIC CHEMISTRY*. (U,G) 4 hours credit. Prerequisite, General Chemistry; Qualitative Analysis is desirable but not required. Chemistry 305 must be taken with Chemistry 303. Lectures, M T W Th F 8-10. Dr. DETAR.

A study of aliphatic and aromatic organic compounds, their occurrence, relations, and uses.

†305. *ELEMENTARY ORGANIC CHEMISTRY*. (U,G) 2 hours credit. Prerequisite, General Chemistry; Qualitative Analysis is desirable but not required. Must be taken with Chemistry 303. Laboratory, M T W Th F 10-12:30. Dr. DETAR and assistant.

Laboratory experiments on the preparation and reactions of typical organic compounds. Laboratory fee, \$15.

307. *INTRODUCTORY ORGANIC CHEMISTRY*. (U,G) 3 hours credit. Prerequisite, General Chemistry; Qualitative Analysis is desirable but not required.

Lectures and written reviews, M T W Th F 8, and also at 9 during the first three weeks. Dr. DeTAR.

A study of the more important compounds of carbon, their occurrence, methods of preparation, relations, and uses. The work covered is equivalent only to the first half of the year course; students who wish a complete course should register for Chemistry 303 and 305.

†311. *INTRODUCTORY ORGANIC LABORATORY*. (U,G) 3 hours credit. Prerequisite or parallel course, Chemistry 307. Laboratory experiments and oral reviews, M T W Th F 10–12:30. Dr. DeTAR and assistant.

The student prepares typical compounds of carbon and familiarizes himself with their properties, reactions, and relations. Laboratory fee, \$20.

†320. *IDENTIFICATION OF ORGANIC COMPOUNDS*. (U,G) 4 hours credit. Prerequisite, a full-year course in Organic Chemistry. Primarily for students contemplating advanced work in organic chemistry or related fields. Lectures, M T W Th F 8. Laboratory, M T W Th F 9–12 or 10–1. Associate Professor BLOMQUIST and assistant.

The classification reactions of organic compounds and the preparation of solid derivatives are applied to the identification of unknown organic substances. Laboratory fee, \$20.

†330. *ADVANCED ORGANIC LABORATORY*. (U,G) 3 to 5 hours credit. Prerequisite, a full-year course in Organic Chemistry, Chemistry 320, and consent of the instructor. Primarily for students contemplating advanced and independent work. Laboratory hours to be arranged in the mornings. (Six working hours a week per credit hour.) Associate Professor BLOMQUIST and Dr. DeTAR.

An advanced course in organic synthetic procedures, involving preparation of intermediates for organic research and use of standard reference works. Laboratory fee, \$20.

## GEOLOGY

†101. *GENERAL GEOLOGY*. (U) 3 hours credit. Equivalent to General Geology 101, fall term. Lectures, M T W Th F 9; laboratory, M W and 1st, 3d, and 5th F 2–4:30. Associate Professor BURFOOT and Mr. WILLIAMS.

The history of geologic ideas, processes of weathering and erosion and the resulting land forms, the materials and the structure of the crust of the earth, and the evolution of mountains. Laboratory studies will be in the field as well as indoors. Field studies will interpret the local geology, and indoor studies will emphasize the identification of minerals and rocks and the analysis and use of topographic maps. Laboratory fee, \$3; excursion fee to be announced at first class session, probably about \$6.

†102. *GENERAL GEOLOGY*. (U) 3 hours credit. Equivalent to General Geology 102, spring term. Prerequisite, General Geology 101, or concurrent registration in General Geology 101. Lectures, daily except Saturday 11; laboratory, T Th and 2d, 4th, and 6th F 2–4:30. Associate Professor BURFOOT and Mr. WILLIAMS.

Subsurface water, glaciers, origin of the earth, geologic time, climates of the past, evolution, fossil record, geological history, and origin of man. Field trips and indoor laboratory exercises on the interpretation and use of geologic maps and the identification of fossils. Laboratory fee, \$3; excursion fee to be announced at the first class session, probably about \$6.

901. *SUMMER FIELD SCHOOL IN GEOLOGY*. (U,G) 6 hours credit. Professor NEVIN. June 12–July 22.

Registration limited to men. For full information write to the Department of Geology and Geography, McGraw Hall.

## MATHEMATICS

161. *ANALYTIC GEOMETRY AND CALCULUS*. (U) 3 hours credit. Prerequisite, Trigonometry. M T W Th F S 10. Mr. MURDOCK.

162. *ANALYTIC GEOMETRY AND CALCULUS*. (U) 3 hours credit. Prerequisite, Mathematics 161 or the equivalent. M T W Th F S 10 or 11. Assistant Professor YOOD and Mr. IWANOWSKI.

163. *ANALYTIC GEOMETRY AND CALCULUS*. (U) 3 hours credit. Prerequisite, Mathematics 162. M T W Th F S 10. Associate Professor POLLARD.

201. *DIFFERENTIAL EQUATIONS*. (U,G) 3 hours credit. Prerequisite, Mathematics 163 or the equivalent. M T W Th F S 11. Mr. MURDOCK.

221. *MATHEMATICS FOR SECONDARY SCHOOL TEACHERS*. (U,G) 3 hours credit. M T W Th F S 9. Associate Professor POLLARD.

This course will treat selected topics in the mathematics taught in the secondary schools with a view to contributing to the enrichment of such teaching and giving a clearer understanding of the concepts and processes involved.

501. *ADVANCED CALCULUS*. (U,G) 3 hours credit. Prerequisite, Mathematics 163 or the equivalent. M T W Th F S 11. Assistant Professor YOOD.

A careful study of limits, continuity, derivatives, and Riemann integrals. Emphasis is placed on the logical development of the calculus rather than on formal applications.

## PHYSICS

†103. *INTRODUCTORY EXPERIMENTAL PHYSICS*. (U,G) 3 hours credit. Demonstration lectures M T W 8. Recitations M T W 9. Three laboratory periods Th F 2-4 and one as arranged. Professor GRANTHAM.

Mechanics, heat, and sound. Text: Howe's *Introduction to Physics*. Laboratory fee, \$5.

†104. *INTRODUCTORY EXPERIMENTAL PHYSICS*. (U,G) 3 hours credit. This course must be accompanied by 103 or preceded by a study of mechanics in either high school or college physics. Demonstration lectures Th F S 8. Recitations Th F S 9. Three laboratory periods T W 2-4 and one as arranged. Professor GRANTHAM.

Electricity and light. Text: Howe's *Introduction to Physics*. Laboratory fee, \$5.

115. *MECHANICS*. (U) 3 hours credit. A course for students of engineering with a deficiency in physics. M T W Th F 8 and M 2-4. Professor GRANTHAM.

Text: Sears-Zemansky, *College Physics*, Part I.

116. *HEAT, GEOMETRICAL OPTICS, AND SOUND*. (U) 3 hours credit. A course for students of engineering with a deficiency in physics. M T W Th F 9 and T 2-4. Associate Professor NEWHALL.

Text: Sears-Zemansky, *College Physics*, Part I.

†117. *ELECTRICITY AND MAGNETISM*. (U,G) 3 hours credit. Prerequisites, Physics 115 and calculus or simultaneous registration in Mathematics 163. Lectures T Th 9. Recitations M T W Th F 8 or 11.

Laboratory T Th F 2-4:30. Associate Professor NEWHALL.

This course constitutes the third term of a four-term sequence in General Physics required of students of engineering. The course includes all the fundamentals of electricity and magnetism of the sequence. Text: Sears, *Principles of Physics*, II: *Electricity and Magnetism*. Laboratory fee, \$5.

211. *INTRODUCTION TO CONTEMPORARY PHYSICS.* (U,G) 3 hours credit. M T W Th F 10. Prerequisite, one year of college physics. Designed primarily for secondary school teachers and others whose main interest lies outside the field of physics. Associate Professors NEWHALL and TOMBOULIAN.

A survey course covering selected material from the field of atomic and nuclear physics presented from the experimental point of view. Elementary charged particles; mass spectroscopy; the electromagnetic spectrum; the quantum theory of radiation and spectra; properties of nuclei; nuclear transformations; cosmic rays.

225. *ELECTRICITY AND MAGNETISM.* (U,G) 3 hours credit. Prerequisite, Physics 117 or 206. Lectures, M T W Th F 9 and 10. Associate Professor TOMBOULIAN.

An introduction to the theory of the electromagnetic field. Static and dynamic fields, dielectrics and properties of magnetic materials, the field equations and electromagnetic waves in free space, the Poynting vector.

Text: Harnwell, *Principles of Electricity and Electromagnetism.*

## ENGINEERING

### MECHANICS

1151. *MECHANICS OF ENGINEERING—STATICS.* (U) 3 hours credit. Prerequisites, Physics 115 and parallel registration in Mathematics 163. M T W Th F S 11-12, W 1-2:30. Mr. GALLACHER.

The principles of statics of particles, chains, and rigid bodies. Equilibrium, friction, centroids, moments and products of inertia, virtual displacements, graphical methods, three dimensional trusses and frames.

1152. *MECHANICS OF ENGINEERING—DYNAMICS.* (U) 3 hours credit. Prerequisites, 1151 and Mathematics 163. M T W Th F S 8-9, W 2:30-4. Mr. GALLACHER.

The principles of dynamics of particles and rigid bodies. Rectilinear, curvilinear, rotational, and general plane motion of rigid bodies. Impulse-momentum, work-energy, virtual work.

1153. *MECHANICS OF MATERIALS.* (U) 3 hours credit. Prerequisites, 1151 and parallel registration in 1152. M T W Th F S 12-1, W 1-2:30. Mr. CONWAY.

Stress and strain, tension, compression, and shear, riveted and welded joints, elementary beam theory, combined stresses, columns, strain energy, beams on several supports.

1154. *ADVANCED STRENGTH OF MATERIALS.* (U) 3 hours credit. Prerequisite, course 1155. M T W Th F S 10-11, W 2:30-4. Mr. CONWAY.

Strength, stiffness, and stability of machine parts, disks, plates, shells, thick cylinders, straight and curved beams; principal stresses in two and three dimensions; fatigue and theories of failure.

1155. *APPLIED MATHEMATICS.* (U) 3 hours credit. Prerequisites, 1152 and 1153. M T W Th F S 9-10, W 2:30-4. Mr. CAMERON.

The formulation and solution of problems arising in Mechanical Engineering which involve the use of elementary differential equations and Fourier Series. Emphasis is placed on numerical as well as analytical methods of solution.

### MATERIALS

1222. *ENGINEERING MATERIALS.* (U) 3 hours credit. Prerequisite, 1221. M T W Th F S 11-12, S 10-11. Mr. MOYNIHAN.

An elementary lecture course in Engineering Materials covering corrosion, fuels

and their combustion, refractories, cementing materials and concrete, wood, rubber, plastics, lubricants, and the testing and inspection of materials.

1231. *ENGINEERING MATERIALS LABORATORY—METALS AND ALLOYS.* (U) 3 hours credit. Prerequisites, Engineering Materials 1221 and Strength of Materials 1153. May be taken simultaneously with the latter course. M Th 1-4:30. Mr. MOYNIHAN.

A course dealing with materials testing and the properties of metals and alloys. The following types of tests with testing machines and strain measurement will be performed: tension, torsion, compression, bending, impact, fatigue, hardness, and ductility. The relation between the properties, structure, selection, inspection, and use of metals and alloys will be shown by the following experiments: carbon steels, cast irons, heat treatment, nonferrous metals and alloys, metallography, spectrography, radiography, and magnaflux.

### CIVIL ENGINEERING

2301. *ELEMENTARY FLUID MECHANICS.* (U) 3 hours credit. Prerequisite, 1132. M T W Th F S 9. Mr. PRIEST.

Dynamics of fluid flow, law of continuity, pressure variation, flow analysis, viscosity effects, surface resistance and form resistance.

2331. *FLUID MECHANICS.* (U) 3 hours credit. Prerequisite, Mechanics 1152. M T W Th F S 8. Mr. PRIEST.

Statics, dynamics of fluid flow, law of continuity, energy equation, turbulence, flow of compressible and incompressible fluids, impulse momentum relations, resistance of submerged bodies, lubrication, and hydraulic machinery. Several demonstration lectures are given to illustrate Fluid Mechanics principles.

2610. *HIGHWAY ENGINEERING.* (U) 3 hours credit. Prerequisites 2110 and 2725. M T W Th F 10; M F 1:30-4:30. Mr. LEWIS.

Design, construction, and maintenance of highways and city streets. Location and alignment (aerial photographic methods included), width, capacity, and geometrical design based on traffic demands. Drainage, soils, stabilization, aggregates. Bituminous materials. Structures; traffic control; landscaping. Economics and administration. Construction methods and equipment for grading and paving of low cost, flexible, and rigid pavements. Analysis and correction of characteristic pavement failures.

2613. *HIGHWAY LABORATORY-STABILIZATION.* (U,G) 3 hours credit. Prerequisites, 2725 and 2610, or may be taken concurrently with Course 2610. T W Th 1:30-4:30. Mr. LEWIS.

Nonbituminous and bituminous materials are tested and their characteristics studied. Soils are sampled and examined and investigations made of the behavior of mixtures of soils with bituminous and nonbituminous materials. Special investigations and tests are made to determine the properties of various combinations of materials and the effects of modification in design.

2614. *ADVANCED HIGHWAY ENGINEERING.* (U,G) 3 hours credit. Prerequisite 2610. T W Th 1:30-4:30. Mr. LEWIS.

Part I: Soils and subgrades; surveying, sampling, compaction, and stabilization practices; special problems in excavation. Part II: Design and construction of base and surface courses for flexible pavements. Part III: Design and construction of rigid pavements. Part IV: Highway planning; urban route selection and geometrical design; design of regional systems of highways, freeways, and parkways.

2642. *TRANSPORTATION ENGINEERING RESEARCH.* (G) 3-6 hours credit. Prerequisites, Courses 2610 and 2614. T W Th 1:30-4:30. Mr. LEWIS.

(a) *RAILROAD ENGINEERING*. Special problems in the economics of location, construction, maintenance, and operation of railroads, comparison of transportation agencies, traffic studies, and economics of various systems of transport.

(b) *HIGHWAY ENGINEERING*. The field of economics of highway engineering offers a wide variety of problems. Laboratory investigations of subgrade soil, subgrade stabilization, and the effects of modifications in design of bituminous and nonbituminous mixtures provide a range of topics for research.

2702. *ELEMENTS OF STEEL AND TIMBER DESIGN*. (U) 3 hours credit. Prerequisite 2701. M T W Th F S 8-10:30. Mr. BURROWS.

Characteristics, properties, and mechanics of timber. Grading and working stresses. Design of timber members and connections. Partial design of timber roof truss. Use of timber in construction work. Design of single steel members and of bolted, riveted, and welded connections.

2706. *STEEL BUILDINGS*. (U,G) 3 hours credit. Prerequisites, Courses 2702 and 2703. M T W Th F S 10:30-1. Mr. BURROWS.

Design of steel frame building with traveling crane of the prevailing type used for powerhouse, shop, or warehouse construction. Maximum stresses are obtained for all members by combination of various loads. The design includes columns, column footings, crane runways, partial design of bridge crane, girts, location, number, and size of windows. Detail drawings.

2707. *STEEL HIGHWAY BRIDGES*. (U,G) 3 hours credit. Prerequisites, Courses 2702 and 2703. M T W Th F S 8-10:30. Mr. BURROWS.

Complete design of a three-lane truss bridge with cantilever sidewalks or of a three-hinged spandrel braced arch bridge using either reinforced concrete slab or steel grid for the floor. Determination of deflection both analytically and graphically, amount of camber to be used and, in case of the truss span, thickness of various wedges to be used on erection bents.

2708. *INVESTIGATION AND RATING OF EXISTING STEEL STRUCTURES*. (U,G) 3 hours credit. Prerequisites, Courses 2702, 2703. M T W Th F S 8-10:30. Mr. BURROWS.

The complete measurement of span and length of members of an existing steel bridge or other structure in order to determine size and weight of structural shapes and reduced sections due to corrosion. Determination of deflection, dead load stresses, and allowable stresses in individual members and from these data determination of safe capacity or rating of structure as governed by the weakest member.

2715. *REINFORCED CONCRETE DESIGN*. (U) 3 hours credit. Prerequisite 2701. M T W Th F 1:30-4:30. Mr. FISHER.

A first course in reinforced concrete. Elementary theory of reinforced concrete is applied to rectangular beams, slabs, T-beams, beams reinforced for compression, columns, and footings. Shear, diagonal tension, and direct stress combined with flexure are treated. Several design reports are required which include reinforcement drawings, schedules, and formwork.

2902. *ENGINEERING LAW*. (U) 3 hours credit. M T W Th F S 8. Mr. THATCHER.

An introductory course in the laws of contract, tort, agency, real property, water rights, forms of business organization, sales, and negotiable instruments; special emphasis on contract documents required on construction work; collateral topics such as workmen's compensation, mechanics' liens, arbitration, and patent law are also included.



2903. *ECONOMICS OF ENGINEERING*. (U) 3 hours credit. Prerequisites 2901 and 3231. M T W Th F S 9. Mr. THATCHER.

The economic aspects of engineering and the application of principles of management to the work of the engineer; economic selection of materials, equipment, and structures; studies for the replacement of existing units; plant layouts; public works economy; the technique of estimating quantities and costs for various types of engineering projects.

#### MECHANICAL ENGINEERING

3235. *INDUSTRIAL ORGANIZATION AND MANAGEMENT*. (U,G) 3 hours credit. No prerequisite. Section 1—Recitations M T W Th F S 9, W 1–2:30; Section 2—Recitations M T W Th F S 10, W 2:30–4. Assistant Professor SAMPSON.

An introductory course in the field of industrial management. The course starts with the industrial revolution and deals briefly with the principles of mass production, types of business enterprise, and the location and growth of industry. Then, in somewhat more detail, are discussed the organization of the plant facilities and the plant personnel with special emphasis on the layout of the plant, types of organizational control, personnel functions, motion and time study, and wage payment systems.

3250. *INDUSTRIAL ACCOUNTING AND COST CONTROL*. (U,G) 4 hours credit. Prerequisite 3235. Recitations, M T W Th F 10. Computing, M T Th F 2–4:30. Associate Professor SCHULTZ.

A basic course in modern industrial accounting including detailed study of job order and process manufacturing cost systems. Standard costs and budgetary control are discussed.

3352. *DYNAMICS OF MACHINERY*. (U,G) 3 hours credit. Prerequisites, Courses 3351 and 1152. Recitations, M T W Th F 11. Drawing periods, T F 2–4:30. Assistant Professor SALTZ.

Graphical and analytical studies of velocities and accelerations and of static and inertia forces in mechanism; engine force analysis, flywheels, and balancing.

3354. *DESIGN OF MACHINES*. (U,G) 3 hours credit. Prerequisites, Courses 3353 and 6113. Drawing periods, M T W Th F 8–11. Assistant Professor WHEELER.

Application of mechanics, kinematics, materials, and processes to the design of complete machines or subassemblies of machines. Computations and layout drawings as required.

3502. *HEAT POWER LABORATORY*. (U,G) 2 hours credit. Prerequisite, 3501. Laboratory periods M T W Th F 8–10:30. Associate Professor FAIRCHILD.

Laboratory study of application, calibration, and accuracy of instruments used in heat-power laboratory, including pressure gages, manometers, planimeters, indicators, tachometers, dynamometers, fluid flow meters, calorimeters, gas analyzers, psychrometers.

3503. *HEAT TRANSFER AND THERMAL MEASUREMENTS*. (U,G) 3 hours credit. Prerequisites, Courses 3501 and 1155. Recitations, M T W Th F 12. Computing periods, M Th 2–4:30 or T F 2–4:30. Associate Professor DROPKIN.

The fundamentals of heat transfer by conduction, convection, and radiation; heat transfer in engineering apparatus. Laboratory instruction in measurement of temperature, thermal conductivity, and film coefficients of heat transfer.

3505. *REFRIGERATION AND AIR CONDITIONING*. (U,G) 3 hours credit. Prerequisites, Courses 3501, and 3502, 3503. Recitations, M T W Th F 12. Computing periods, M Th 2–4:30 or T F 2–4:30. Assistant Professor TRACY.

Study of the fundamental theory of refrigeration; analysis of compression, absorp-

tion, and steam jet systems; refrigeration equipment and engineering applications. Principles and practice in the conditioning of air including heating, humidifying, cooling, and dehumidifying.

3631. *MECHANICAL LABORATORY*. (U,G) 3 hours credit. Prerequisites, Courses 3535 and 3536. Laboratory M Th 1-4:30. Professor GAGE.

Laboratory instruction on steam power plants and power plant auxiliaries, internal combustion engines and accessories, hydraulic machinery, and pneumatic machinery.

### ELECTRICAL ENGINEERING

4111. *BASIC ELECTRICAL ENGINEERING*. (U) 4 hours credit. Prerequisites, Mathematics 163, Physics 117, Chemistry 102 or 106. Lecture, T Th 9; recitation, M T W Th F 11; computing, T Th 1:40-4:30. Assistant Professor DAVIES.

This is the first of two successive courses presenting the basic elements of electrical engineering which are common to the several branches of study which follow. They present the elemental concepts and laws of electricity and their application with emphasis on analysis rather than the memorization of formulas. The student is encouraged to regard the physical significance of problems and to question the mathematical result of a combination of formulated principles.

The material covered is identified with the following topics: conductors and resistance; electrical measuring instruments; resistance measurement; electromotive force and its sources; electromagnetic induction; alternating emf; power-distribution circuits; d-c electrical networks and methods of solution; conductors of nonuniform section or material; mapping of current paths; magnetics, magnetic circuits, and forces; electromagnets; self- and mutual inductance, coupling, reactors; electrostatic energy, fields, and forces; capacitance; transient and alternating currents in circuits with resistance and inductance, in circuits with resistance and capacitance, and in series circuits with resistance, inductance, and capacitance.

Text: Strong's *Electrical Engineering*.

4121. *ELECTRON TUBES AND CIRCUITS*. (U) 3 hours credit. Prerequisite, 4112. Must be accompanied by 4126. Lecture-recitations, M T W Th F 10; computing, W 1:40-4:30 and S 10-1. Associate Professor ANKRUM.

This is the first of a group of courses which present and expand the fundamental laws of electron behavior and correlate such behavior with the functioning of simple electronic circuits.

The material covered in this first course includes: the theory of matter and of electron emission; emitters; conduction in high vacuum and in gas; diode characteristics; photoelectric cells; the construction, characteristics, and control of the cathode-ray tube; rectification and filtering with L and  $\pi$  filters; high-vacuum triode characteristics; tube parameters, and equivalent-circuit studies; multigrid tube characteristics; and R-C coupled amplifier characteristics.

Text: Ryder's *Electronic Engineering Principles*, and supplementary notes.

4126. *ELECTRONICS LABORATORY*. (U) 2 hours credit. Prerequisite, 4112. Must be accompanied by 4121. Lecture, Laboratories: Section A, M Th 1:40-4:30 and W 8-10; Section B, T F 1:40-4:30 and Th 8-10. Mr. AMOROSI.

This course is a laboratory study of topics selected from the accompanying theory course. The characteristics of typical electron tubes are determined, and these tubes are then utilized in appropriate circuits for more complete tests and analyses.

Text: Ryder's *Electronic Engineering Principles*, and supplementary notes.

4216. *ELECTRICAL MACHINERY LABORATORY*. (U) 4 hours credit. Prerequisites, 4116 and 4211. Recitation, M F 11; laboratory, Section A, M Th 1:40-4:30; Section B, T F 1:40-4:30. Associate Professor OSBORN and STAFF.

Following a study of direct-current magnetization in general and the magnetic circuits of dynamos, the course proceeds to measured and predicted characteristics of direct-current generators and motors with all common methods of excitation; characteristics of generators in parallel; detection and correction of faulty commutation; construction, connection, and operating characteristics of typical direct-current motor controllers; measurement of segregated losses, and prediction of efficiency of dynamos by mechanical-drive and by retardation methods; characteristics and typical applications of the Amplidyne. There is also a continuation of the study of elementary single-phase a-c circuits, and a study of a-c bridge circuits and the detectors commonly used in such circuits.

4932. *ELECTRICAL ENGINEERING*. (U) 3 hours credit. Prerequisite, 4931. Lecture-recitations, M F 8; laboratory, Section A, M Th 1:40-4:30; Section B, T F 1:40-4:30. Associate Professor ERICKSON.

The course is intended to develop a general understanding of d-c generators and motors, motor starters and controllers, transformers, induction motors, synchronous machines, a-c single-phase motors, and d-c and a-c selsyn units. All machines are considered as to construction, theory of operation, and operating characteristics.

#### ENGINEERING INDUSTRIAL COOPERATIVE

The College of Engineering operates, for certain undergraduate students in the Schools of Mechanical and Electrical Engineering, an Engineering Industrial Cooperative. These students take all of the courses of the regular curricula but are not in residence when the courses of Terms 5 and 8 are regularly offered on campus.

The following courses are scheduled for the summer of 1950. One group of courses will be given in the seven weeks from June 12 to July 29; the other group in the seven weeks from July 31 to September 16.

This program is not part of the Summer Session but is included in this *Announcement* because few of these courses are offered in the Summer Session, and a limited number of qualified applicants can be accommodated by this means. Refer to the *Announcement of the College of Engineering* for full course descriptions. For further information as to fees, admission, etc., address inquiries to Professor E. M. Strong, College of Engineering, Cornell University, Ithaca, New York.

#### *Courses in Basic Electrical Engineering*

4112. *ALTERNATING-CURRENT CIRCUITS*. Term 5. Required. Credit four hours. Two lectures, four recitations, and two computing periods each week. Prerequisites, 4111 and Mathematics 607. Text: Kerchner and Corcoran, *Alternating-Current Circuits*.

4116. *ELECTRIC-CIRCUIT LABORATORY*. Term 5. Required. Credit three hours. Two lectures and two lecture-laboratory periods each week. Prerequisite, 4111. Must be preceded or accompanied by 4112. Text: mimeographed notes, supplemented by reference to Laws's *Electrical Measurements*, and to Strong's *Electrical Engineering*.

#### *Courses in Machinery*

4211. *DIRECT-CURRENT MACHINERY*. Term 5. Required. Credit three hours. Two lectures, two recitations, and two computing periods each week. Prerequisite, 4111. Text: Kloeffer, Kerchner, and Brenneman, *Direct-Current Machinery*.

#### *Courses in Power*

4311. *ADVANCED CIRCUIT ANALYSIS*. Term 8. Required in the following options: Power Generation and Utilization, and Industrial Electronics and Control.

Credit three hours. Four lectures and two computing periods each week. Prerequisites, 4221 and Mathematics 608.

4321. *ELECTRICAL MACHINE THEORY*. Term 8. Required in the Power Generation and Utilization option. Credit three hours. Six recitations each week. Prerequisite, 4221. Text: Tarboux's *Alternating-Current Machinery*, and supplementary notes.

4361. *POWER SYSTEMS*. Term 8. Required in Power Generation and Utilization option. Credit three hours. Four lectures and two computing periods each week. Prerequisite, 4221. Text: Tarboux's *Electric Power Equipment*.

#### *Courses in Radio and Communication*

4511. *RADIO AND COMMUNICATION THEORY*. Term 8. Required in Radio and Communication option. Credit three hours. Four lectures and two recitations or computing periods each week. Prerequisite, 4122. Texts: Arguimbau's *Vacuum Tube Circuits*, and supplementary notes.

4513. *COMMUNICATION NETWORKS*. Term 8. Required in Radio and Communication option. Credit three hours. Six recitations each week. Must be preceded or accompanied by 4122. Text: T. E. Shea's *Transmission Networks and Wave Filters*, and supplementary notes.

4516. *RADIO AND COMMUNICATION LABORATORY*. Term 8. Required in Radio and Communication option. Credit three hours. Two recitations and two laboratory periods each week. Must be preceded or accompanied by 4511. Text: Arguimbau's *Vacuum Tube Circuits*, and supplementary notes.

#### *Mechanics of Engineering*

1152. *MECHANICS OF ENGINEERING—DYNAMICS*. Credit three hours. Prerequisites, 1151 and Mathematics 163.

1155. *APPLIED MECHANICS*. Credit three hours. Three recitations a week. Prerequisites, 1152 and 1153.

#### *Engineering Materials*

1221. *ENGINEERING MATERIALS*. Credit three hours. Three lecture periods a week. Prerequisite, Physical Chemistry 402 or its equivalent.

1223. *ENGINEERING MATERIALS*. Credit three hours. Two lectures and one laboratory period each week. Prerequisites, Organic Chemistry, Chemistry 301, and Physical Chemistry, Chemistry 402.

#### *Hydraulics*

(Including Theoretical and Experimental Hydraulics and Hydraulic Engineering.)

2331. *FLUID MECHANICS*. Required for students in Mechanical and Electrical Engineering. Credit three hours. Three recitations a week. Prerequisite, Mechanics 1152.

#### *Industrial and Engineering Administration*

3241. *ELEMENTARY INDUSTRIAL STATISTICS*. Credit three hours. Four recitations and two computing periods a week. Prerequisite, Calculus.

3250. *INDUSTRIAL ACCOUNTING AND COST CONTROL*. Credit four hours. Four lectures and two computing periods a week. Prerequisite 3235.

*Machine Design*

3351. *MECHANISM*. Credit three hours. Four recitations and two design-room periods a week. Prerequisites, 3112 and 1151.

*Heat-Power Engineering*

3501. *ENGINEERING THERMODYNAMICS*. Credit four hours. Four lectures and four recitations a week. Prerequisites, Mathematics 161, 162, 163; Physics 116; Chemistry 105, 106.

3502. *HEAT-POWER LABORATORY*. Credit two hours. Four laboratory periods a week. Prerequisite, 3501, or else 3501 must be taken in the same term.

3533. *HEAT-POWER ENGINEERING*. Credit three hours. Four recitations and two laboratory periods a week. Prerequisite, 3530.

*History*

166. *SCIENCE IN WESTERN CIVILIZATION*. Credit three hours.

*Physics*

214. *ATOM, NUCLEAR AND ELECTRON PHYSICS*. Credit three hours. Four lectures and two recitations. Prerequisites, Physics 118 and Mathematics 608 or the equivalents. Primarily for students in Electrical Engineering.

## *Officers*

Cornelis W. de Kiewiet, Ph.D., Acting President and Provost of the University.

Carleton Chase Murdock, Ph.D., Dean of the University Faculty.

Charles Williams Jones, Ph.D., Dean of the Graduate School.

Frederick Harry Stutz, Ph.D., Director of the Summer Session.

William Arthur Smith, Ph.D., Assistant Director of the Summer Session.

## *Faculty*

Harold Herbert Abelson, Ph.D., Associate Professor and Director of the Educational Clinic, College of the City of New York.

Frederick B. Agard, Ph.D., Associate Professor of Linguistics.

Edward William Aiton, M.S., Field Agent, Extension Service, U.S. Department of Agriculture, Washington, D.C.

Harry Darkes Albright, Ph.D., Associate Professor of Speech and Drama and Chairman of the Department.

Arthur A. Allen, Ph.D., Professor of Ornithology.

Elsa G. Allen, Ph.D., Instructor in Ornithology.

Lucile Allen, Ed.D., Dean of Women.

Walfred A. Anderson, Ph.D., Professor of Rural Sociology.

Carroll C. Arnold, Ph.D., Assistant Professor of Speech and Drama.

Thomas J. Baird, M.R.P., Assistant Professor of Engineering Drawing.

Thomas Livingstone Bayne, Jr., Ph.D., Associate Professor of Rural Education.

Knight Biggerstaff, Ph.D., Professor of Chinese History and Chairman of the Department of Far Eastern Studies.

Sara Elizabeth Blackwell, M.S., Assistant Professor of Home Economics Education.

Alfred T. Blomquist, Ph.D., Associate Professor of Chemistry.

- David D. Boyden, M.A., Associate Professor of Music, University of California, Berkeley, California.
- Laurence C. Boylan, M.S. in Ed., Director of Guidance, Gloversville Schools, Gloversville, N.Y.
- Alice Mary Briant, Ph.D., Associate Professor of Food and Nutrition.
- Earl Brooks, M.A., Professor of Industrial and Labor Relations.
- John M. Brophy, Ph.D., Associate Professor of Industrial and Labor Relations.
- J. Dabney Burfoot, Ph.D., Associate Professor of Geology.
- Earle N. Burrows, C.E., M.C.E., Associate Professor of Civil Engineering.
- Gladys Loraine Butt, M.A., Associate Professor of Textiles and Clothing.
- Julian Edward Butterworth, Ph.D., Professor of Rural Education.
- John David Melvin Cameron, B.M.E., Instructor in Mechanics.
- Lawrence R. Campbell, Ph.D., Professor of Journalism, University of Oregon, Eugene, Oregon.
- Charles E. Cladel, M.S., C.P.A., Associate Professor of Hotel Administration.
- Daniel G. Clark, Ph.D., Professor of Botany.
- Robert Crowthers Clark, Jr., M.S., Associate Professor of Sociology.
- Robert T. Clausen, Ph.D., Professor of Botany.
- Harold Clough, Instructor in Agricultural Engineering.
- Harry Donald Conway, Ph.D., Professor of Mechanics.
- John Farnsworth Cornman, Ph.D., Assistant Professor of Ornamental Horticulture.
- Dorothy Willey Cousens, M.S., Assistant Professor of Economics of the Household and Household Management.
- Carolyn Hubbs Crawford, M.S., Assistant Professor of Home Economics Education.
- Kathleen Lucile Cutlar, M.S., Assistant Professor of Institution Management and Assistant Manager of the Cafeteria.
- Robert H. Dalton, Ph.D., Professor of Child Development and Family Relationships and Head of the Department.
- Norman D. Daly, M.A., Associate Professor of Fine Arts.
- C. Douglas Darling, M.D., Professor of Clinical Medicine.
- Delos F. DeTar, Ph.D., Instructor in Chemistry.
- David Dropkin, Ph.D., Associate Professor of Mechanical Engineering.
- Alexander Drummond, M.A., L.H.D., Professor of Speech and Drama.
- Theodore Eckert, M.S., Instructor in Science Education.
- Lloyd H. Elliott, Ed.D., Assistant Professor of Secondary Education.
- Lynn A. Emerson, Ph.D., Professor of Industrial and Labor Relations.
- Don L. Essex, Director, Division of School Buildings and Grounds, State Education Department, Albany, N.Y.



- Howard Newton Fairchild, M.E., E.E., Associate Professor of Mechanical Engineering.
- Harold Feldman, M.A., Instructor in Child Development and Family Relationships.
- Faith Fenton, Ph.D., Professor of Food and Nutrition.
- Gordon P. Fisher, Ph.D., Assistant Professor of Civil Engineering.
- Nelson N. Foote, M.S., Instructor in Sociology and Anthropology.
- Edward Wilbur Foss, M.S., Professor of Agricultural Engineering.
- Eugene S. Foster, M.A., Assistant Professor, Empire State FM School of the Air, Radio Center, Syracuse University.
- Edith M. Fox, M.A., Curator, Cornell Regional History Collection.
- F. Barron Freeman, M.A., Assistant Professor of English.
- Walter Hoyt French, Ph.D., Professor of English.
- Victor Raymond Gage, M.E., M.M.E., Professor of Mechanical Engineering.
- Edwin Snow Gallacher, B.S. in M.E., Instructor in Mechanics.
- Perry Webster Gilbert, Ph.D., Associate Professor of Zoology.
- Marvin David Glock, Ph.D., Professor of Educational Psychology.
- Ward Goodenough, Ph.D., Assistant Professor of Sociology, University of Pennsylvania, Philadelphia, Pa.
- Eva L. Gordon, Ph.D., Assistant Professor of Rural Education.
- Guy Everett Grantham, Ph.D., Professor of Physics.
- Carl G. Gustavson, Ph.D., Associate Professor of History, Ohio University, Athens, Ohio.
- William John Hamilton, Ph.D., Professor of Zoology.
- John V. Haralson, Ph.D., Instructor in Psychology.
- Katharine Wyckoff Harris, M.A., Professor of Institution Management and Head of the Department.
- Baxter Hathaway, Ph.D., Assistant Professor of English.
- Hazel Marie Hauck, Ph.D., Professor of Food and Nutrition.
- George Harris Healey, Ph.D., Assistant Professor of English.
- Glenn W. Hedlund, Ph.D., Professor of Business Management.
- Oliver H. Hewitt, Ph.D., Assistant Professor of Wildlife Management.
- Edwin Raymond Hoskins, Ph.D., Associate Professor of Rural Education.
- Marshall Howard, A.B., Instructor in Economics.
- David Hyatt, M.A., Assistant Professor of Industrial and Labor Relations.
- Roscislaw Michael Iwanowski, M.A., Instructor in Mathematics.
- James J. Jehring, M.A., Assistant Professor of Industrial and Labor Relations.
- Burton Aaron Jennings, B.S., Professor of Agricultural Engineering.
- Vernon H. Jensen, Ph.D., Professor of Industrial and Labor Relations.
- William A. Jewett, Jr., M.F.A., Instructor in Speech and Drama.

- Albert E. Jochen, Ph.D., Director of the Middlesex County Vocational and Technical High School, New Brunswick, N. J.
- Alfred E. Kahn, Ph.D., Assistant Professor of Economics.
- Gordon M. Kirkwood, Ph.D., Assistant Professor of Classics.
- Loretta Klee, M.A., Director of Social Studies, Ithaca Public Schools.
- Milton R. Konvitz, Ph.D., Professor of Industrial and Labor Relations.
- Elwood Albert LaFortune, M.A., Vice-Principal of Ithaca High School and Director of Guidance, Ithaca Public Schools.
- J. Paul Leagans, Ph.D., Professor of Extension Education.
- Robert E. Lee, Ph.D., Assistant Professor of Biology.
- Samuel L. Leonard, Ph.D., Associate Professor of Zoology.
- Taylor D. Lewis, B.S. in C.E., Associate Professor of Civil Engineering.
- Howard S. Liddell, Ph.D., Professor of Psychology.
- Lisle L. Longsdorf, M.S., Professor in Extension, Kansas State College of Agriculture, Manhattan, Kansas.
- Clive Maine McCay, Ph.D., Professor of Animal Nutrition.
- John W. McConnell, Ph.D., Professor of Industrial and Labor Relations.
- Elsie F. McMurphy, M.A., Associate Professor of Textiles and Clothing.
- John W. MacDonald, L.L.B., Professor of Law, Secretary and Director of the New York State Law Revision Commission.
- Norman Malcolm, Ph.D., Assistant Professor of Philosophy.
- William Howard Martin, Ph.D., Associate Professor of Agricultural Education, University of Connecticut, Storrs, Connecticut.
- Arthur Mauch, Ph.D., Professor of Extension, Michigan State College, East Lansing, Michigan.
- Francis Edward Mineka, Ph.D., Professor of English and Chairman of the Department.
- James Elmer Montgomery, Ph.D., Associate Professor of Housing and Design.
- Royal Montgomery, Ph.D., Professor of Economics.
- Aimee Moore, M.A., Instructor in Institution Management and Assistant Manager of the Cafeteria.
- Clyde B. Moore, Ph.D., Professor of Education.
- Helen E. Moser, M.A., Assistant Professor of Home Economics Education.
- William G. Moulton, Ph.D., Professor of Modern Languages.
- John R. Moynihan, M.M.E., Professor of Engineering Materials.
- Walter Lynn Murdock, A.B., Instructor in Mathematics.
- Henry Alonzo Myers, Ph.D., Professor of English.
- A. Gordon Nelson, Ph.D., Associate Professor of Educational and Vocational Guidance.
- Charles Merrick Nevin, Ph.D., Professor of Geology.
- Herbert Frank Newhall, Ph.D., Associate Professor of Physics.

- Katherine Jane Newman, M.S., Instructor in Food and Nutrition.  
Melvin Lorrel Nichols, Ph.D., Professor of Chemistry.  
David Novarr, Ph.D., Instructor in English.  
Edward Novitski, Ph.D., Associate Professor of Genetics, California Institute of Technology, Pasadena, California.  
Milacent Grimes Ocvirk, M.A., Director of English, Ithaca Public Schools.  
E. Laurence Palmer, Ph.D., Professor of Rural Education.  
Edward Bellamy Partridge, M.A., Instructor in English.  
Vernon S. L. Pate, Ph.D., Assistant Professor of Entomology.  
Irene Patterson, M.S., Associate Professor of Home Economics Education.  
Loren C. Petry, Ph.D., Professor of Botany.  
Harry H. Pierce, Ph.D., Instructor in History, Syracuse University, Syracuse, N.Y.  
Harry Pollard, Ph.D., Associate Professor of Mathematics.  
Joseph Pullman Porter, M.L.D., M.S.A., Associate Professor of Ornamental Horticulture.  
C. Gordon Post, Ph.D., Professor of Political Science, Vassar College, Poughkeepsie, N.Y.  
Alfred M. S. Pridham, Ph.D., Associate Professor of Ornamental Horticulture.  
Melville S. Priest, M.S., Associate Professor of Civil Engineering.  
Mary Elizabeth Purchase, M.S., Instructor in Economics of the Household and Household Management.  
John R. Raeburn, Ph.D., Professor of Economics, The London School of Economics and Political Science, University of London, London, England.  
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